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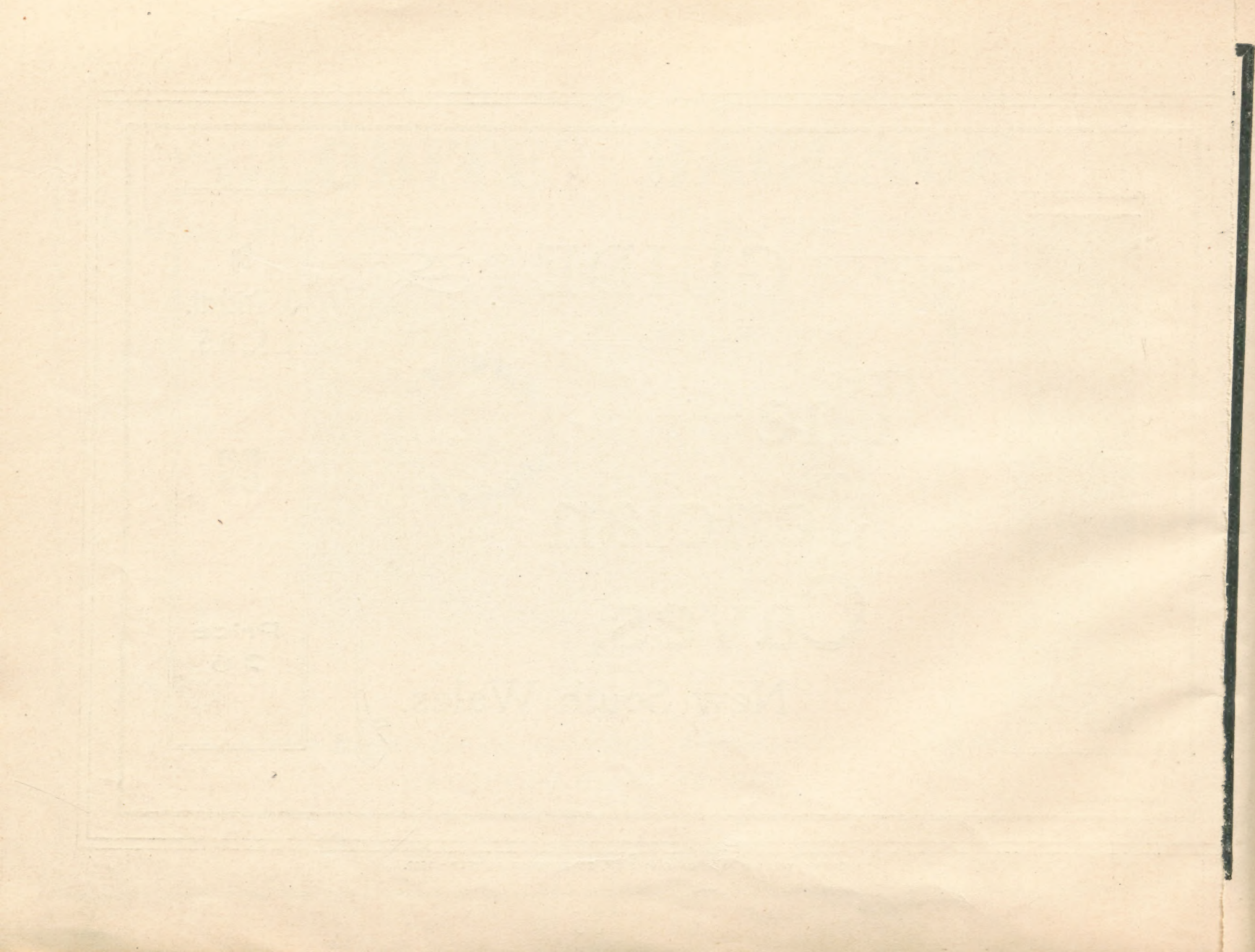
GUIDE
— to —
The
Jenolan
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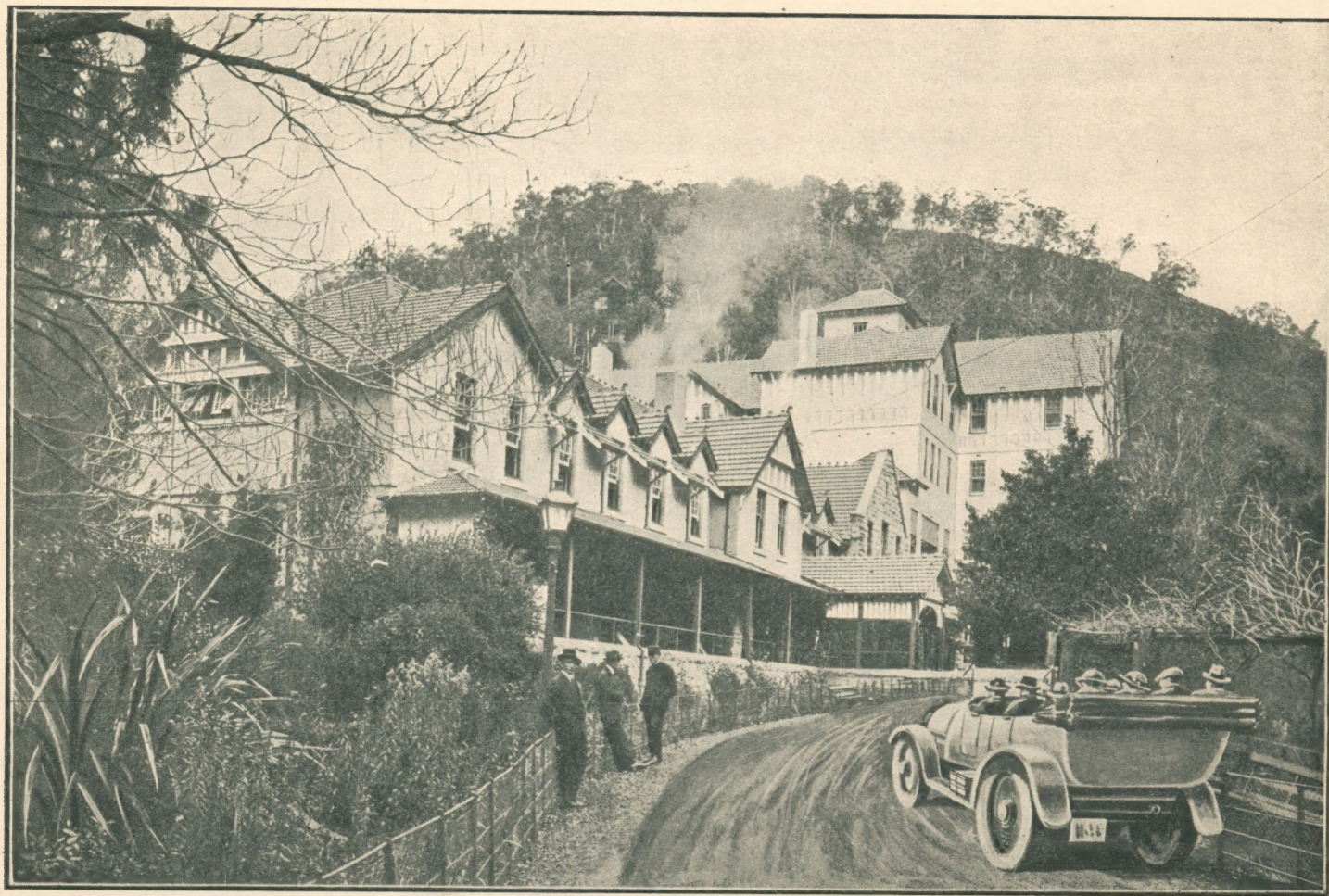
By
O. Trickett,
L.S., M.S.



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JENOLAN CAVES HOUSE.



INTRODUCTION TO THE FOURTH EDITION.

It is a glowing tribute to the author of this book, Mr. Oliver Trickett, that a fourth edition of the work is necessary owing to the complete disposal of previous editions.

The careful descriptions of what may be seen in the Jenolan Wonderland will stand through all editions just as the immutable and glittering formations of its splendid caverns will stand for ever.

The first edition was issued in 1890, followed by a second in 1905, and a third in 1915.

As the years roll by unceasing attention is given, not only to provide for the ever-increasing tourist traffic, but to make Jenolan irresistible in its attraction to those who are out for a holiday.

The opening of the Orient Cave, the latest of Jenolan's Jewel Caskets, though occurring in the darkest period of the Great War, marked the commencement of a new era. Some years had been occupied in building its steps and vantage view points, and in the installation of its brilliant lighting scheme. The results have justified this expenditure of time and labour. No fewer than 5,392 persons availed themselves of the opportunity of viewing this Masterpiece of Nature during the Summer season (six months) 1920-21. At Easter, 1918, the new extension was opened transforming Caves House into a palatial hotel, and placing it amongst the most modernly equipped hostels in Australia, and certainly in the first flight of the world's tourist houses.

In 1919 a disastrous flood, which lasted only twenty minutes, not only severely damaged part of the Caves House appointments, but carried debris into the Grand Arch and seriously threatened the Caves systems below. Steps are now being taken by relief water channels which will eventually be a complete safeguard against any similar happenings.

Developmental work steadily goes forward under that doyen of the Caves, Mr. J. C. Wiburd, to whose unceasing care and attention they have been kept inviolate from the collector of souvenirs and the caligraphy of the autograph fiend. Under his supervision, wonderful improvements to the lighting, especially in the Lucas and Imperial systems, have been effected. Particularly is this noticeable in hidden "flood lights" which bring into prominence hitherto unexpected wonders in nature's handicraft. Everywhere possible the electric cables and wiring, which in earlier days caused some degree of disfigurement, have been cunningly carried behind columns and stalagmites, under an eagle but loving eye, that jealously guards against the fracture of the finest crystal.

A comparison of visits of inspection to Jenolan Caves affords an interesting light on the part they play, not only as direct revenue producer, but the intangible benefit accruing to the State and Commonwealth by their world-wide reputation. In 1911 Jenolan was visited by 8,460 persons, who paid 21,325 visits of inspection to the various caves. In 1912 there were 26,553 inspections, and in subsequent years as follows:—1913, 26,788 inspections; 1914, 30,460 inspections; 1918, 45,017 inspections; 1919, 37,762 inspections; 1920, 64,245 inspections, made by the 28,000 persons who visited the Caves that year. Of this number, about half were visitors from overseas and other States. At Christmas dinner, 1920, not only was every State of Australia represented, but tourists from India, Java, and the East, Canada, America, United Kingdom, and Europe were present. On one day at Easter, 1921, no less than 967 visits were made by the 197 tourists staying at Jenolan Caves House, together with the 237 visitors who came down for the day on the splendidly-appointed car service which is the feature of the journey to Jenolan. No less than eighty-seven motor-cars arrived there before noon on the day mentioned.

The enormous increase in traffic into such a circumscribed spot and over such mountainous country has necessitated the institution of traffic regulations governing the road and Caves. At present, a scheme of cutting exit passages from the Caves is in hand. This will not only provide a one-way stream for traffic, and make possible more frequent inspections, but will add immensely to the comfort of visitors. For instance, a detailed survey has shown that a level pathway can be

constructed from the Orient and Temple of Baal Caverns, which will emerge in daylight within a few yards of the Caves House. It is also known that a cutting of less than 100 feet will admit of a passage from Katie's Bower (at end of the Left Imperial Cave) to the Grand Archway, through the comparatively level pathways in the "Flitch of Bacon." At no distant date it is hoped that, for some of the caves, inspections will commence at 9.30 a.m. and continue hourly throughout the day, should the traffic warrant. Ventilation is still a difficult problem and is the cause of restriction in numbers and visits to some caves. This is particularly noticeable in the Orient Cave. Experiments in air draughts cannot be carried on owing to the danger of deterioration of formation, so obvious in the older-known caves, but the institution of air-locked exits will afford some relief.

J. S. CORMACK,

Director.

New South Wales Government Tourist Bureau, Sydney, Australia



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REGULATIONS, 1921.

THE following are **some** of the Regulations which have been issued for the management and preservation of the Jenolan Caves.

ADMISSION TO CAVES.—No person shall be allowed to enter any cave unless accompanied by the caretaker or other authorised guide, and the caretaker or guide may exclude from any cave any person who is in a state of intoxication, or who behaves in a disorderly manner, or who is in such a condition as, in the opinion of the caretaker or guide, would be likely to be offensive or cause annoyance to other visitors, or who is guilty of a breach of any of these Regulations. The caretaker or guide is also empowered to refuse admission to any person who, in his opinion, is physically unfit for the fatigue involved in inspecting the Caves.

CHARGES FOR ADMISSION.—The admission of a visitor to any cave shall be by ticket only. Tickets will be on sale for thirty minutes prior to each inspection, and only those persons who have purchased tickets for the caves of which notice has been given as available for inspection will be permitted to make an inspection.

Charges for tickets are :—

- (a) For an ordinary day or night inspection of the Orient Cave at Jenolan Caves, 5s. each person.
(b) For an ordinary week-day inspection of the Temple of Baal, River Cave, and Jubilee Cave at Jenolan, 3s. each person.
(c) For an ordinary week-day inspection of Caves other than those enumerated in (a) and (b), 2s. each person.
(d) For each Sunday and night inspection (except of the Orient Cave), 3s. each person.

Children under 14 years—for all inspections (except of the Orient Cave)—half price.

For a special inspection of any cave at times other than those provided in Regulation 3, and (provided a guide is available for the purpose) for a party not exceeding six persons, in addition to the usual inspection fees, £1.

THE JENOLAN CAVES.

No visitor shall be permitted to inspect any cave until the prescribed ticket has been collected by the caretaker or guide.

ARRANGING VISITS.—The caretaker is authorised to arrange the parties of inspection each day, and will make every endeavour to meet the wishes of visitors when opportunity offers. The number of persons who can be allowed to visit any cave at one time is necessarily limited in proportion to the size and conformation of the cave.

DESTROYING FAUNA, &c.—Any person shooting or trapping any animal or bird, or destroying or removing the eggs of any wild bird, except in cases where the Director may authorise noxious animals or birds to be removed or destroyed, or damaging or destroying any trees, shrubs, ferns, or native flora within any part of the Caves Reserve, shall be liable to a penalty not exceeding £10.

(Jenolan Caves Reserve has been proclaimed a Sanctuary under the Birds and Animals Protection Act, 1918.)

INJURY TO THE CAVES.—Any person breaking, defacing by writing or marking, or otherwise injuring or removing any rock, stalactite, stalagmite, or other part of the caves or arches, or their improvements, or injuring the improvements or the vegetation on any part of the Caves Reserve, will be liable to a penalty not exceeding £10, and will be prosecuted with the utmost rigour of the law.

CAMPING GROUND.—Visitors are permitted to camp on the Caves Reserves on payment to the caretaker of 1s. per week for each person, but only in such places as are set apart for the purpose, and on the express condition that lawful instructions for the orderly maintenance of the camping ground be obeyed. Any person wilfully disobeying such lawful orders shall be liable to a penalty not exceeding £2, and shall be removed from the Caves Reserves by the caretaker or other caves officials, all of whom have the authority of special constables.

OBSTRUCTING ROADWAYS.—Obstructing the roadway within the Jenolan Caves Reserve is strictly prohibited, and no vehicle will be allowed to remain or any material to be stored or deposited in the Grand Archway, or on any part of the roadway between No. 2 Garage on the west side of the Grand Arch, and No. 3 Garage (old Coach-house) on the east side of the Grand Arch; any person guilty of a breach of this Regulation shall be liable to a penalty not exceeding £10.

GARAGING OF MOTOR-CARS.—Motor-cars shall be placed in the motor garage or appointed place at Jenolan Caves Reserve. A charge determined by the Director will be made for garage. Such charges are to be paid to the Manager of Jenolan Caves House or other duly appointed officer.

REGULATION OF SPEED OF MOTOR-CARS :—

- (a) Motor-cars must not be driven at such a pace between No. 3 Garage and No. 2 Garage, Jenolan Caves, as to cause inconvenience or danger to the public.
- (b) Motor-cars ascending or descending the "5-Mile Hill," Jenolan Caves road (between 31st Mile Post and Caves House), must keep at a distance of not less than 50 yards apart from cars proceeding in the same direction, and must not be driven on any part of the road at a pace dangerous to the public.
- (c) Motor-cars may be prohibited from ascending or descending the "5-Mile Hill" referred to in (b) at such hours as may be determined from time to time by the Director.

DAY VISITORS.—Day visitors arriving by motor vehicles at Jenolan Caves must be set down and picked up at the Kiosk. Motor vehicles must not remain standing in front of the Kiosk or near thereto longer than necessary for the purpose of setting down or picking up passengers.

Stock found on the Caves Reserve will be impounded and the owners prosecuted.

All employees are under the supervision of the caretaker, subject to instructions from the Government Tourist Bureau.

Visitors are requested to insert their names and addresses in the books provided for the purpose, and to read the published Regulations relating to the management of the Caves, which are posted in conspicuous places.

The caretaker is instructed to immediately report to the Director, Government Tourist Bureau, the name and address of any employee, visitor, or person infringing any Regulation published for the information of the public, or any Regulation or Instruction issued for the guidance of employees. Any officer failing to comply with any Regulation or Instruction will be severely dealt with.



H. Phillips, Photo.]

LOOK-OUT, FURBER'S STEPS, KATOOMBA.

ROUTES TO THE JENOLAN CAVES.

Route from Mount Victoria.

THIS road, 36 miles in length, is an excellent track either for vehicles or motors. From Mount Victoria the Old Bathurst Road is followed for 7 miles. It passes along the deep cutting known as the Victoria Pass. Here a magnificent panorama is spread out before the spectator. To the left lies the Cox River Valley, of which many glimpses are obtained further on. To the right towers Mount York, while all round are mural precipices and fern-clad gorges cut out of the massive sandstone rock. An interesting description of the Blue Mountain Valleys is given by Darwin, in his "Geological Observations," &c., 1876, Part I, chapter vii, page 151.* He says:—

It is not easy to conceive a more magnificent spectacle than is presented to a person walking on the summit-plains, when, without any notice, he arrives at the brink of one of these cliffs, which are so perpendicular that he can strike with a stone the trees growing at a depth of between 1,000 and 1,500 feet below him. On both sides he sees headland beyond headland of the receding line of cliffs, and on the opposite side of the valley, often at a distance of several miles, he beholds another line rising up to the same height with that on which he stands, and formed of the same horizontal strata of pale sandstone.

The late Mr. C. S. Wilkinson also refers to them as follows:—†

"The vastness of the depth and extent of the precipitous gorges and valleys of the Blue Mountains inspires one with feelings of silent awe and wonder, and impresses the minds of some persons with the notion that such enormous ravines in the mountains must have required violent convulsions in the earth's crust for their formation; but if we examine the rocks on all sides of the valley we see no breaks nor signs of violent disturbance. The various beds of rocks in horizontal strata may be seen to continue uninterruptedly around the sides of the valley, and the succeeding layers of rock, as we descend one side of the ravine, gradually approach the corresponding layers on the other side, until at the bottom, in the bed of the watercourse, we find that they actually join, which they would not do if the sides of the ravine had been violently torn asunder. We perceive, therefore, that the various out-cropping strata must once have been continuous right across the valley or ravine, and that they have been removed by some agency without disturbance of the underlying beds. What, then, is the agency? Not *volcanic fire*, but *running water*. Look at the

* See also Darwin's "Journal of Researches," 1839, p. 522.

† C. S. Wilkinson, L.S., F.G.S., "Railway Guide," 1886.



THE VICTORIA PASS (old road).

sloping surface of any earth cuttings or embankments that have been exposed to rain action; see the miniature ranges and intervening valleys that the water draining off has furrowed out. Notice the miniature precipices left where the harder earth material has resisted the action of the running water; also at the bottom of the embankment, where the incline ceases and the water flows gently, how it deposits in miniature alluvial flats the earth it has scooped out and washed down from above. Now, could we look down from a considerable height, and, as it were, take a bird's-eye view of the Blue

Mountains, exactly similar features would be presented to us as we observed in the earth embankment. Wherever the soft clay strata of the Coal Measures exist there are sloping surfaces; where the harder Hawkesbury rocks appear, there are cliffs; while the easily-disintegrated clay-beds have been washed away, even to the undermining the overlying sandstone. The latter has resisted to a great extent the denuding agencies, and been left in projecting masses which, at last, having the supporting soft strata removed, break away and roll in great bosses down the sides of the hill, perhaps as far as into the bed of the stream below, a perpendicular cliff being left where they broke away from the main mass of rock.

Of these valleys and their origin, Dr. A. R. Wallace writes ("Nineteenth Century," 1893, vol. 33, page 391):—

Readers of "Lorna Doone" must have been interested in the curious valleys occupied by the Doone Outlaws in an almost impregnable stronghold. The only considerable valleys which can be classed as originally inaccessible (though, of course, no valley any more than any mountain is absolutely so) seem to be the Yosemite, in California, and the valleys of the Grose and Cox Rivers, in New South Wales. In some respects the valleys carved out of the great sandstone plateau of New South Wales are even more remarkable than the Yosemite itself. . . . The ravines which discharge their waters into the little Cox River occupy an area of 1,212 square miles. The whole forms the basin of this mountain stream, and is bounded by cliffs increasing from about 1,000 feet near its outlet to about 2,500 feet near its

western limits; the valley bottom being not much above sea-level, and the only outlet being through a gorge about a third of a mile wide. It is to the late J. Beete Jukes, Director of the Geological Survey of Ireland, that we owe the full establishment of the principle that valleys of all kinds, from the most open to the most narrow and profound, are hollows worn by erosion.* Some considerable amount of decay is still going on in the giant cliffs of the Blue Mountains. . . . Though in the life of a man a block may seem unchanged, in a few thousand years it may have entirely disappeared, and such a



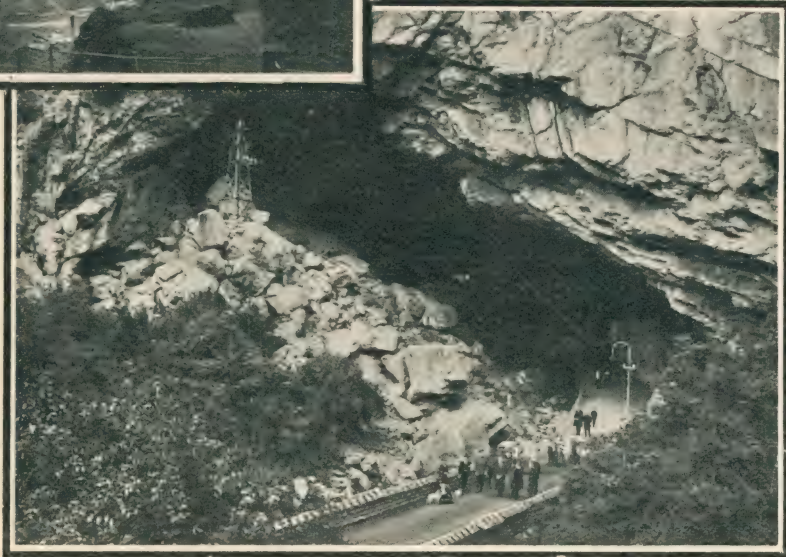
EVANS' CROWN.

* "Student's Manual of Geology," by J. Beete Jukes, 3rd edition (edited by Sir A. Geikie, F.R.S.), page 450.

The action of running water, frost, snow, and wind had eaten into and undermined the sandstone rock. It was merely a question of time. This interesting subject is further referred to by Professor T. W. E. David* (President's address, Royal Society of New South Wales, 1896), as follows :—

The valleys of the Blue Mountains have been formed through sub-ærial erosion, and do not owe their slopes or positions to any original depressions in the sheets of sediment of which they were formed.

In the westward portion of the Blue Mountains the soft strata of the Coal Measures, which underlie the sandstones of the Hawkesbury Series, stand high, and have thus been much exposed to denudation, and have led to a constant undermining of the sandstones wherever these softer rocks have been brought within reach of denuding agencies. As, however, the soft strata of the Permo - Carboniferous Coal Measures dip eastwards at a more rapid angle than the river channels, which also flow eastwards, it follows that in the east portion of the Blue Mountains the rivers leave the strata of the Coal Measures and flow over the hard sandstones of the Hawkesbury Series, so that no undermining action is possible on the eastern area; hence the narrowness of the river gorges near the eastern escarpment.



INTERIOR AND EXTERIOR VIEW OF GRAND ARCH.

* Sir T. W. Edgeworth David, Professor of Geology, K.B.E., C.M.G., D.S.O., B.A., Dsc., F.R.S., F.G.S.

lapse of time probably bears a less proportion to the period occupied by the valley formation than does a single hour to the life of a man. . . . Every characteristic the valleys possess is fully explained by that simple theory of earth sculpture by atmospheric agency.

Returning to the description of the route to the Caves: For some distance after leaving the Victoria Pass, a remarkable landmark may be distinguished in a solitary tree perched up on the end of Mount York. Near it is a sandstone obelisk erected in 1900, with suitable tablets to commemorate the first crossing of the Blue Mountains by Messrs. Blaxland, Lawson, and Wentworth in 1813, or two years before the Battle of Waterloo. A second column, with appropriate tablets, was erected in May, 1913, to commemorate the centenary of the first crossing by these intrepid explorers. The road rapidly descends to Big and Little Hartley. Here is a hostelry with conveniences for travellers, and further on are the old Government buildings, occupied while convicts constructed this part of the road. Leg-irons and other relics of a hundred years ago are on exhibition at the hostelry. The 7-mile post on the Old Bathurst Road is left behind at the crossing of the River Lett, a tributary of the Cox River, over 1,000 feet below the summit of the Victoria Pass. From this point the distances along the road from Mount Victoria and from the Caves are marked on mile-posts. The Cox River is shortly ($8\frac{1}{4}$ miles) crossed. The road now ascends. Fine views of the Kanimbla Valley are met with at intervals. The road to Bowenfels branches off at $10\frac{1}{2}$ miles, a road into the valley at 14 miles, Lowther at 15 miles, where a memorial to the local men who fell in the Great War has been erected (mile-post marked $\begin{smallmatrix} MV \\ 15 \end{smallmatrix} \begin{smallmatrix} JC \\ 21 \end{smallmatrix}$), and a road into the Ganbenang Swamps at $15\frac{1}{3}$ miles. The half-way houses of Hampton are reached, one at 18 miles ($\begin{smallmatrix} MV \\ 18 \end{smallmatrix} \begin{smallmatrix} JC \\ 18 \end{smallmatrix}$), and the other at 19 miles, at either of



ENTRANCE TO DEVIL'S COACH-HOUSE.

which meals and accommodation may be obtained. Several branch roads are passed after leaving Hampton, namely, from Rydal at $19\frac{1}{4}$ miles; from Oberon, at 21 miles; and the bridle-track from Katoomba at $27\frac{1}{2}$ miles. The highest point on the road is in the vicinity of the 25th and 26th mile-posts. On either side of the Katoomba track, the road reaches an altitude of 4,000 feet



A BLUE MOUNTAIN WATERFALL.

or over. From Hampton the road is undulating until within a few miles of the Caves, where the descent is rapid (about 1,500 feet) along a siding which winds round the steep slopes of the creeks and watercourses which feed the Jenolan River. Nearing the Caves, Jenolan River is crossed over one of the most beautiful little bridges in the State, built of the Caves limestone. To the right lies the Devil's Coach-house or Easter Cave, through which the flood-waters of McKeown's Valley pass. Below, subterranean and surface waters are conserved by a massive concrete dam enclosing a fine sheet of water which supplies the motive power for the electric lighting of the Caves and Caves House. Above, on the left, can be seen the passage to the Lucas Cave. Perched high up in front is the Carlotta Arch, and near it the entrances to the Nettle and Arch Caves. The road now passes under the immense limestone cavern named the GRAND ARCHWAY mile-post marked ($\frac{MV}{36}$ $\frac{JC}{0}$). A short distance further on the Caves House is reached. The road throughout is picturesque and beautiful. Of the geology

of the country through which it passes it may be said, briefly, that it commences in the plateau of the Blue Mountains, formed of deeply-eroded Hawkesbury Sandstones (Triassic Series). It descends shortly through the Upper Coal Measures and Upper Marine Series, then from Hartley to beyond Hampton

through granite of Carboniferous age, and finally, before reaching the Caves Limestone, through Radiolarian shales (Palæozoic rocks) intersected by felstone dykes.*

Route from Tarana.†

There is a well-made road from Tarana Railway Station to the Caves, $35\frac{3}{4}$ miles in length. A branch line of railway for the first 16 miles to Oberon is in course of construction. For a long time the routes from Bathurst and Tarana were the only coach roads to the Caves. The road from Tarana is not without natural objects of much interest. Within 2 miles from Tarana are some huge bosses of granite perched on the summit of the hill known as Evans' Crown. These remarkable rocks, which stand out very conspicuously amidst the forest-covered ranges, are splendid examples of atmospheric denudation. They are the remaining portions of the mass of granite that once surrounded them, and are the silent witnesses of the enormous denudation which eroded the present valleys and swept away that granite mass; they therefore teach instructive lessons in physical geology. Shortly after leaving Tarana the road crosses the Fish River, at Mutton's Falls Bridge ($2\frac{3}{4}$ miles); then for 6 miles it ascends granite hills, until an elevation of 3,500 feet above sea-level, or 950 feet above Tarana, is attained. The next 10 miles is marked by undulating country of Silurian Schists and sandstones. Hazelgrove is passed at 13 miles from Tarana, and the village of Oberon at 16 miles. Near Oberon there is a picturesque view looking down into the valley of the Fish River Creek. The grassy hills and alluvial flats here seen afford rich pasturage, and formed the site of one of the earliest settlements in the district, made about eighty years ago. A clear running stream, named the Duckmaloi River, one of the tributaries of the Fish River, is crossed at $24\frac{1}{2}$ miles. (Anglers will find rainbow trout abundant in the Duckmaloi.) The village of Edith is passed at 26 miles. The road then gradually ascends until the Great Dividing Range is passed over, at an altitude of 4,120 feet above the sea, at a point called "The Porcupine." At 30 miles the road comes to the end of a high range, at a spot once known as the "Top Camp," or Top of Caves Hill.

* From map by Prof. T. W. E. David, B.A., F.G.S., &c., 1896.

† Mostly taken from the description by C. S. Wilkinson, L.S., F.G.S., in the "Railway Guide," 1886.

From this point, looking towards the east a fine view may be obtained. Immediately in the foreground lies a deep valley, and in it, not a mile distant, are seen craggy masses of grey limestone, in which the Caves are situated; beyond this the valley gradually widens, with wooded hills rising, as it were, one behind the other, up into high ranges on either side; whilst in the extreme distance appear the Blue Mountains, marked with that horizontal line of yellow sandstone cliffs which indicates the Hawkesbury Sandstone formation overlying the Coal Measures. In clear weather dotted along the railway cuttings may be distinguished the settlements of Mount Victoria, Blackheath, Medlow Bath, &c. From the "Top Camp" an excellent zig-zag road has

been formed down the side of the steep range to the small area of level land, on the edge of which the Caves House stands. The tourist's attention is drawn to a notice-board, fixed on the roadside, which indicates that the descent is now very rapid. The fall is about 1,800 feet in $2\frac{1}{2}$ miles. The zig-zag has its advantages. At each turn a new view is presented of the splendid panorama formed by the ridges of the Caves limestone and the densely-wooded gorges and mountains which surround it.



OBERON ROAD, NEAR CAVES HOUSE.

Route from Bathurst.

The Caves may also be reached from Bathurst, from which they are distant about 36 miles southeasterly, in a direct line, and about 48 miles by road, *via* Oberon. The greater distance involved by

taking the Bathurst Road, instead of that from Tarana, is somewhat compensated for by the fine scenery to be obtained from the Macquarie Plains, the Fish River Valley at O'Connell, and the extensive view of the country, so diversified with plains and hills, to be seen towards the north when ascending the "Mount."

Route from Katoomba.

This is a bridle-track. It was defined by Mr. W. M. Cooper, Surveyor of Public Parks, in 1884.* On leaving Katoomba, 3,350 feet above sea-level, the Old Western Road is followed for $1\frac{1}{4}$ miles to the "Explorers' Tree." The traveller learns from an inscription that this was the farthest distance reached by Messrs. Blaxland, Lawson, and Wentworth in their first attempt to cross the Blue Mountains in May, 1813. A previous unsuccessful attempt had been made by Mr. George Bass, in 1796. Later on, in the year 1813, Mr. G. W. Evans, Deputy Surveyor of Lands, continued the work of exploration, and surveyed a road from the Explorers' Tree to the Bathurst Plains. The construction of the road from Sydney to Bathurst was completed on 21st January, 1815. Returning to the description of the Caves track: The Megalong Cleft is reached at 2 miles from Katoomba (3,280 feet above sea-level). This fern-clad



THE THREE SISTERS, KATOOMBA.

* "Track from Katoomba to Jenolan Caves," W. M. Cooper, Sydney, 1885.

and romantic gorge has been named Nellie's Glen, and is a favourite resort of tourists. It contains the cascade known as the Ethel Fall. The traveller is now on the edge of the Kanimbla Valley, part of the great depression of the Cox River Valley, which reaches a width of 7 miles, and a depth of 2,500 feet. From the foot of the gorge, having descended 600 feet in a quarter of a mile, the track follows the Megalong Creek. Passing the Megalong Station, the creek is left at $6\frac{3}{4}$ miles from Katoomba (at 1,870 feet). The track then runs along a siding, above which is the Pinnacle Hill, while far below lies the Cox River. At $10\frac{1}{4}$ miles (940 feet) the crossing of this river is reached, near its junction with the Gibraltar Creek, and may be made dry-shod in ordinary seasons. This is a picturesque spot, well worth the journey so far. The river-bed is strewn with large grey granite boulders, over which the water foams in cascades in flood-time. Looking back, the bold outline of the sandstone cliffs, which bound the edge of the tableland, 2,500 feet above the spectator, can be seen. From the Cox River the track follows up the Gibraltar Creek, which is crossed three times. At $12\frac{1}{2}$ miles the Mini Mini Range (2,310 feet) is passed over, and at $13\frac{1}{4}$ miles the Little River is reached. Half a mile further on this river is crossed. The track then rises up the Black Range, which is followed until the road from Mount Victoria to the Caves is met with, at an altitude of nearly 4,000 feet above sea-level, 21 miles from Katoomba, and 8 miles by road from the Caves. (See description of route from Mount Victoria.) If desired, the bridle-track may still be followed. It passes over Mount George. The Caves are reached by it in 7 miles. Here and there on the Black Range striking views are obtained of thickly-wooded and fern-clad gorges, of mountain peaks, and of the sandstone cliffs which flank the tableland along which the Great Western Railway runs. The track is not well defined in places, but the trees are blazed along its course at intervals of about a chain. It is practicable and interesting, but not an easy route either on horseback or on foot. The homesteads of a few settlers are met with between Gibraltar Creek and the Little River.

THE JENOLAN CAVES.



THE PINNACLE ROCK, GRAND ARCHWAY.

THE LIMESTONE CAVES OF NEW SOUTH WALES, of which there are many, have the reputation of being more attractive than those of any other part of the world.

The Jenolan Caves are exceptionally beautiful, and contain an endless variety of enchanting and interesting formations. The stalactitic and dripstone growth in them is majestic and massive in places; in other places it is remarkable for its delicacy. Columns and stalactites, which are feet in diameter, are succeeded by clusters of tiny glistening pendants or by fragile tracteries like filagree work. There are draped forms like shawls, which are curiously ornamented with coloured bands, owing to the presence during certain periods of some iron in the solutions of carbonate of lime from which they were formed. Some growths are translucent; others are opaque and snowy white or tinted with charming colours. There are coral bowers and fairy-like grottoes, "Nature's jewel caskets," which blaze with the light reflected from myriads of crystals. Crystalline deposits, which resemble sparkling cascades, here and there grace the walls. All these beautiful things must be seen to be appreciated.

From some observations, the temperature of the majority of the Caves was found to be 52° , although as low a temperature as 48° was recorded in some of them. In the vicinity of the present underground waterways the temperature probably varies.

The different caverns have been named and are described in their order further on.

Situation.

The Jenolan Caves are situated on the eastern watershed of the great range which divides the waters of the Fish and Cox Rivers, and occur in the deep valley at the head of the Jenolan River, which feeds the Cox River, a tributary of the Nepean and Hawkesbury Rivers.

History.

Two of the last survivors of the Cox River aborigines, "Betsy Grant" and "Jenny Clay," informed Mr. W. Mylecharane, L.S., that the Caves and the limestone ridges surrounding them were known to the blacks under the name "Binoomea."

The first white man to discover them was a bushranger named McKeown, who used a small cave as a retreat. This is known as McKeown's Hole, and is situated on the bend of the valley of that name, which runs through the main caves 3 miles further down. Their locality was first made public by Mr. James Whalan in 1838, who, when following the tracks of a stolen horse, discovered McKeown's Camp, and subsequently assisted the police to capture the bushranger. Before leaving

the locality, Mr. Whalan found the Great Archways which form part of the series of caverns known as the Jenolan Caves.

They rapidly began to attract attention. Many excursions were made to them. A description of a visit to the Caves (including the Elder Cave) was published in the *Bathurst Advocate* of the 30th December, 1848. At that early date the necessity for protecting the Caves was shown by the writer's statement: "We loaded ourselves up with the curiosities of the place."



Kerry & Co., Photo.]

CAVE
EXPLORATION.

Y



[Copyright.]



They were first called the Bindo Caves, from a small cattle-station, some 12 miles distant, owned by Mr. P. Mylecharane, whose relatives made frequent visits to the Caves over fifty years ago. They were subsequently known as the Fish River Caves, although on the Cox River water shed, but were finally named the Jenolan Caves by *Gazette* notice dated 10th August, 1884, after the parish in which they are situated. The name Jenolan is derived from the native name Jen-o-làn, signifying a high mountain. As time went on their fame spread, and they were visited by many adventurous spirits, who were not deterred by the wild country to be traversed, the want of accommodation and the perils and difficulties of exploring caverns whose direction and extent were little known.

The Lucas Cave was discovered in 1858 by N. Wilson, C. Whalan, and G. Falls. Since that date the most important discoveries made have been the Imperial Cave, by J. Wilson, in 1879; the Aladdin and Mafeking Caves, by F. J. Wilson, 1897 and 1900, respectively; and the River Cave and branches, by J. C. Wiburd and J. C. Edwards, assisted by R. I. Bailey, in 1903-1904.

The Government did not recognise the necessity of protecting the Caves for some years after their discovery.

However, on the 2nd October, 1866, an area of $6\frac{1}{4}$ square miles of country surrounding the Caves was reserved, and on the 8th March, 1867, Mr. Jeremiah Wilson was appointed caretaker, at the modest salary of £25 per annum. From that date up to the present time neither expense nor trouble has been spared to open up the Caves, to make them easy of access, and to add to the attractions of their surroundings.



SURVEYING IN CAVES.

On the 24th March, 1909, in accordance with the provisions of the Public Trusts Act, Messrs. Percy Hunter, E. F. Pittman, W. L. Vernon,* and T. F. Furber were appointed trustees of the Caves Reservé, which is now 6,000 acres in extent.

Formation of the Caves.

The Caves Limestone extends from the Grand Archway, with a comparatively unbroken outcrop N. 10° W. 3 miles, and S. 6° E. 2 miles or more. It lies almost directly across the main valley, whose two principal creeks, instead of cutting down the limestone barrier, found it easier to excavate subterranean channels, and so formed the Caves. Limestone, next to gypsum and rock-salt, is more soluble in water than other portions of the earth's crust.

“It is perhaps not out of place to trace some steps in the course of Time that are forcibly presented to us. What a circle in the laws of Nature is suggested! First, the decaying vegetation of some ancient forest is invisibly distilling the gas known as carbonic acid; then a storm of rain falls, clearing the air of the noxious gas, and distributing a thousand streamlets of acid water over the surrounding country, which, as it drains off, not only wears the rocks it passes over, but dissolves them in minute quantities, especially such as contain much lime; then, laden with its various compounds, flows off to the distant sea, where reef corals, lying in fringing bands round the coast, are slowly absorbing the lime from the water around them, and building the fragile coatings that protect them during life. Slowly, as the land sinks, the coral-bank increases in height, for reef corals can only live near the surface of the water; and soon a considerable thickness has been obtained, while below the upper zone of live corals lies a vast charnel-house of dead coral-coverings; then comes a change—suitable temperature, or some other essential condition, fails, killing out all the corals. Through long ages other deposits accumulate over them, gradually crushing and consolidating the coral bank into a firm rock. At last a convulsion of the earth's crust brings it up from the buried depth in which it lies, leaving it tilted on its edge, but still, perhaps, below the surface of the ground; rain, frost, and snow slowly remove what covers it, until it lies exposed again to the sunlight, but so changed that, only for the silent but irresistible testimony of the fossil forms of which it is composed, it were hard to believe that this narrow band of hard grey rock was once the huge, but fragile, coral-bank glistening in the bright waters with a thousand hues.†”

Then commences the process of cave-making. The decaying vegetation of the surrounding forest produces carbonic acid; the rains spread over the ground; the acidulated water dissolves the limestone

* Died 17-1-1914.

† L. H. G. Young, “Railway Guide,” 1886.

rock, forming tunnels and caverns, and the dissolved lime is partly deposited—

“in the beautiful and fantastic forms of stalactites and dripstones, but chiefly carried away in solution down the Cave Creeks into the Jenolan River, on to the Nepean and Hawkesbury, and so out to sea at Broken Bay. Arrived in the waters of the Pacific, it is partly absorbed by fish, crustacea, shell-fish, and tiny organisms on our coasts, and partly carried southwards by the East Australian current; and later, northwards into waters warm enough to support the life of the coral polyp, as at Lord Howe Island. Here it is taken up by the polyp, and converted into beautiful coralline structures. Thus history repeats itself, and the coral polyps of to-day construct their stony skeletons out of the material which formed the bones of their Palæozoic ancestors.*”

It may not be uninteresting to note the points in which these caves differ from the largest caves in the world, namely, the Mammoth Caves of Kentucky, whose channels have been estimated to be 150 miles in length.† The Mammoth Cave limestone has a capping of 70 feet of sandstone. The known caves of New South Wales are in limestone, which outcrops on the surface. The temperature is about the same in both, but the air in the Mammoth is so dry that timber placed in it as far back as 1812 shows no sign of decay, nor iron any sign of rust. In the Jenolan Caves, timber commences to rot and iron to rust with great rapidity. The marvellous beauty and wealth of ornamentation of the Caves of New South Wales is doubtless in a great measure due to their humidity. The walls and ceilings of the Mammoth Cave exhibit incrustations of crystals of gypsum (sulphate of lime), and the floors of its caverns contain large quantities of saltpetre. These are almost absent from the Jenolan Caves. The latter depend for their decoration on deposits of carbonate of lime.

Some caves have a much greater depth than those of Jenolan. For instance, the Armand Cave, Lozere, Southern France, is 680 feet deep. This cave is also remarkable for its stalagmites, which occur like a forest of palm-trees from 50 to 90 feet in height.‡

All limestone caves are not entirely formed by running water. In the Wind Cave, Missouri, with its 97 miles of caverns, the shapes of some of the chambers are due to jets of water forced up from intermittent hot springs or geysers. This cave, as well as others in Missouri and in South Dakota, contains chambers which are marvellously beautiful.§

* Sir T. W. E. David, Professor of Geology, K.B.E., C.M.G., D.S.O., B.A., Dsc., F.R.S., F.G.S.

† See *The Century Magazine*, 1898, Vol. lv, No. 5, pp. 643 to 658, “The Mammoth Cave,” by J. R. Proctor, formerly State Geologist of Kentucky.

‡ *Scientific American*, 1898, Vol. lxxviii, No. 15, p. 228. § “Cave Regions of the Ozarks and Black Hills,” L. A. Owens, Cincinnati, 1898.

For those who are interested in the study of caves, or speleology, reference may be made to the official reports contained in the Geological Survey publications of the countries in which caves exist, and to "Cave Hunting, &c." (W. B. Dawkins, London, 1874), "Celebrated American Caverns" (Dr. H. C. Hovey, Cincinnati, 1882), "Les Abimes" (E. A. Martel, Paris, 1894).

Geology.

The Jenolan Caves limestone is probably of Silurian age. Its dip is steep W. 10° S. at 60°, with a thickness of between 500 and 600 feet, corresponding to a surface width of between 600 and 700 feet. It contains the fossils—*Cyathophyllum*, *Heliolites*, *Orthoceras*, *Crinoids*, and *bivalve shells**; *Pentamerus Knightii*, *Paleoniso Brazieri*, *Loxonema antiqua*.†

The limestone is associated with a thick series of claystones, and these latter are intruded by quartz-porphyrries. To the west of the Caves are Radiolarian cherts, whose age is uncertain, but is probably Ordovician. These cherts are intruded by a large andesitic dyke, which is exposed at the back of the Caves House.

The floor of the Grand Archway is in some parts of red earth, the thickness of which has yet to be ascertained. The worn and polished edges of many of the rocks indicate that for a long time this cave has been the resort of wild animals, and probably of man also, whose remains may be buried here. Masses of breccia occur in places, consisting of large and small pieces of limestone and other rocks cemented together with carbonate of lime. Thin veins of nitre, or saltpetre, occur in this breccia, and also fill crevices in the solid rock of the walls. This nitre has been chemically formed by oxidation of the ammonia given off during the decomposition of the excrement of animals. Nitric acid is thus produced, which, combining with some of the potash and other alkalies present in the earth and rocks, forms an impure variety of saltpetre.‡

In some of the branches of the Right and Left Imperial and Jubilee Caves, superficial deposits of phosphatic substances occur. These may be either in the form of (1) thin veins on the marl composing the floors, and containing up to 30 per cent. of phosphoric acid; or (2) a white pulverent substance,

* C. S. Wilkinson, F.G.S. † R. Etheridge, Junr. ‡ C. S. Wilkinson, F.G.S., "Railway Guide," 1886.

THE JENOLAN CAVES.

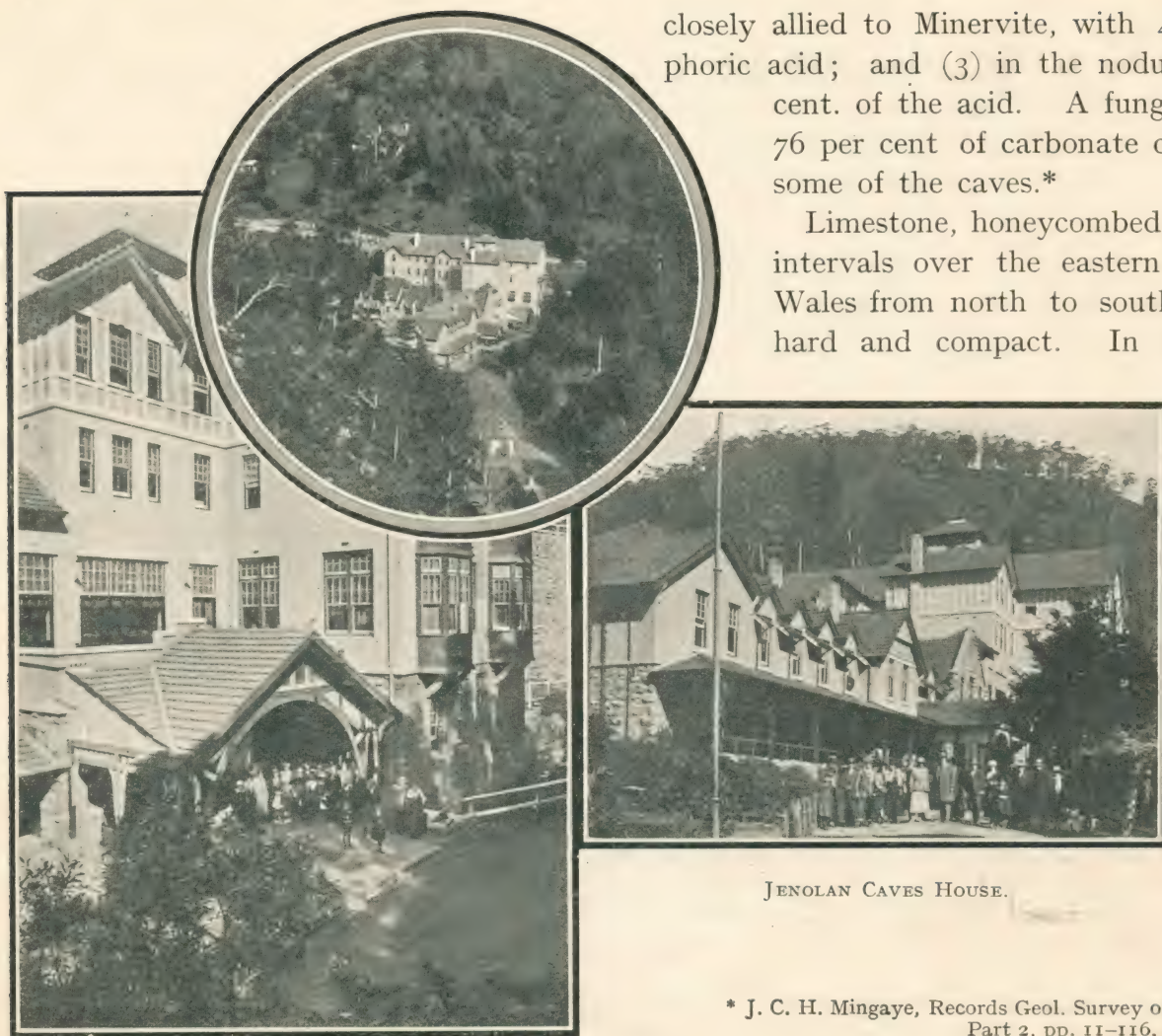
closely allied to Minervite, with 40 per cent. of phosphoric acid; and (3) in the nodular form, with 10 per cent. of the acid. A fungoid efflorescence, with 76 per cent of carbonate of lime, also occurs in some of the caves.*

Limestone, honeycombed with caves, occurs at intervals over the eastern part of New South Wales from north to south, and is in all cases hard and compact. In this respect it differs

materially from the soft foraminiferal limestone of Recent Age in Western Australia, which also contains caverns of considerable beauty.

Accommodation for Visitors.

The first visitors to the Caves were piloted by Mr. James Whalan, in 1838,



JENOLAN CAVES HOUSE.

* J. C. H. Mingaye, Records Geol. Survey of N. S. Wales, 1899, VI, Part 2, pp. 11-116.



WATERFALL, JENOLAN RIVER.

from his home near Oberon. The parties contented themselves for some years after with such protection for the night as the Devil's Coachhouse or Grand Arch afforded. A dancing platform was erected in 1869.

The first effort to cater for visitors was made by the then caretaker, Jeremiah Wilson, in 1880, when he erected a five-roomed structure. Additions were subsequently made, but the major portion was destroyed by fire in 1895.

In 1896 the Hon. Sydney Smith, then Secretary for Mines, under which Government Department the Caves were placed, commenced building operations on a substantial scale. In 1898 a structure of attractive appearance, solidly built of the Caves limestone, appeared. It embraced what is now the music-room of the present building, the wings extending towards the Grand Arch, and a portion up Camp Creek, also a billiard-room; the old wooden buildings were removed right up Camp Creek. In 1896 the Caves Reserve and all its activities were placed under the newly formed Intelligence Department, which subsequently became the Tourist

Bureau. As the Caves became increasingly popular, the accommodation became taxed to such an extent as to be totally inadequate. From the designs of the late Colonel Vernon, then Government Architect, the present block of buildings arose round and incorporated the original. It contains accommodation for nearly 200 guests, with a dining-room capable of seating 140 people, billiard-room, music, smoke and lounge rooms, wine bar and private sitting rooms. Ample supply of water ensures hot and cold baths, sewerage, &c., and provides power through a hydro-electric scheme to supply lighting for house, caves arch, and grounds. Garages, work-shops, refrigeration plant, kiosks for sale of post-cards, photographs, &c., soda fountain, post and telegraph office with savings bank all add to make the menage an up-to-date palatial hotel replete in every detail. Furnishings and equipment are rich and kept in first-class condition. Some bedrooms are fitted with baths and toilettes.

The Caves House is surrounded by tastefully laid out gardens, in which are screened ample toilet convenience for the hundreds of one-day visitors, now a remarkable feature of Jenolan. A mile down Jenolan River, which is dotted in its course with picturesquely placed guides' cottages, power, house, &c., and weired at intervals to conserve the water, is the vegetable garden and pig farm. Owing to the rugged nature of the country, and poor soil, the dairy, which supplies the house with nearly 100 quarts of milk daily, is situated on the tableland 9 miles from the Caves.



O. Trickett, Photo.]

Within the last few years, the road from Mount Victoria to Jenolan has been improved until its 36 miles is looked upon as one of the great motor highways of the State. Transit arrangements are so completely organised that a traveller may leave Sydney at 9.25 a.m. by fast train, lunch at Mt. Victoria, and proceed thence by touring motor to the Caves, arriving at 4 p.m., enjoying the magnificent scenery of the Blue Mountains in full daylight.

Cave Improvements.

The first improvements made in the Caves were in a large measure due to the great interest taken in them by the late Mr. C. S. Wilkinson, Geological Surveyor-in-Charge, and Mr. P. F. Adams, then Surveyor-General.

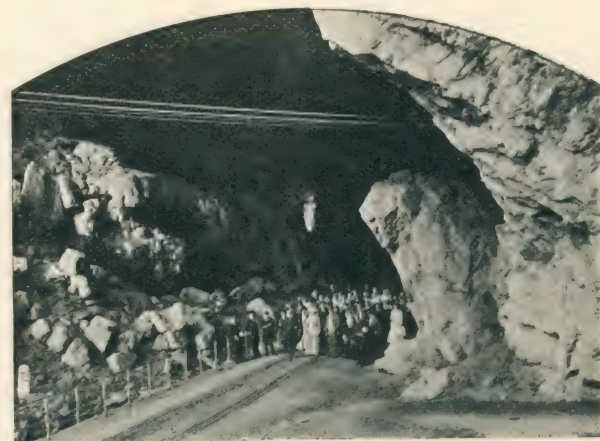
At an early date, ladders of wood or wire rope were placed where hempen ropes had previously been used for access to dangerous or difficult passages in the Caves. As time went on, these primitive improvements were gradually replaced by steps cut out of the rocks or formed in cement, and by massive iron staircases. Dangerous places have been bridged over, or railed off with wire rope and netting. Easier means of access are being continually provided. In 1898 new passages were cut through the sides of the Grand Archway into the Lucas and Imperial Caves. The entrances to the Caves are protected by iron doors, and the delicate formations by wire-netting.

The steps of the first visitors to the Caves were lighted on their way by candles, subsequently lamps burning magnesium wire were introduced. Electric light supplied from the power of a steam-engine placed in the Grand Arch was installed in 1887. This was soon succeeded by the erection of Leffel Wheel in 1890. In 1917 the present power-station was erected, but fast as replacements are made, faster grows the demand for more power and light. The paths through the Caves are lighted better than any city thoroughfare, and the marvellous formations which embellish the interior of the grottos, temples, chambers, and caverns are brought out sometimes with dramatic effect, but at all times with a clearness overpowering and bewildering the beholder.

Outside the Caves well graded tracks provide beautiful walks and relief from life's hum in sylvan glades where wallaby and bird alike have been jealously guarded till they are as friendly as domestic animals.

The Grand Archway.

North-easterly from the Caves House, and 300 yards down what was known to early visitors as the Surveyor's Creek, is the tunnel-shaped western entrance of the Grand Archway. From this point the waters of the creek have, in the course of ages, cut their way right through the



GRAND ARCHWAY BEFORE AND AFTER CONSTRUCTION OF ROADWAY.

solid limestone mountain and formed the Grand Archway, 450 feet long, 40 to 70 feet high, with a varying width of from 35 to 180 feet. The huge rocks and boulders which marked the course of the old waterway through the Arch have been levelled to form part of the excellent roadway which connects the Caves House with Mount Victoria. Near the eastern end, on the northern

side, are the new and old entrances to the Imperial Cave, while over the rock-strewn floor on the southern side rise the stone steps which lead into the Lucas Cave. These works, carried out for the convenience of visitors, have in a measure modified the original appearance of the cavern, but its main features remain unaltered.

Its proportions and outline are gloomily impressive and awe-inspiring. It is like the portico to some great castle of Giant Despair. Its entrance is a marvel of natural architecture, and one wonders how so spacious a roof can remain intact under a weight so enormous.*"

From a seat on the steps to the Lucas Cave, the visitor may in comfort view most of the various points of interest. He is reminded by the wallaby-polished surfaces of the rocks of the time that has elapsed since they were thrown down. Looking across the roadway he sees the gigantic rock called the "Old Camp," where visitors used to rest before other accommodation was provided. "Here for many years in the midst of the wallaby-drives, near to the haunt of the lyre-bird (native pheasant), the first caretaker of the Caves, Mr. Jeremiah Wilson, had his sleeping place."*

In front of the Old Camp stands the massive "Pulpit Rock." Away above this is the "Organ Gallery," or "Loft," so called from the grouping and form of a number of columns and stalactites. Below the "Loft," to the left, is a stalagmite which has taken the form of a recumbent lion. A stalagmite on the right looks like a man's face. If the spectator allows his fancy to run riot he may conjure up many a ghostly figure from the fantastic forms which rise dimly from the gloomy recesses of the cavern. There are several chambers running from the sides of the Archway. The largest of these is called the "Flitch of Bacon Cave," which is somewhat extensive, and requires the services of a guide to explore. It is not very attractive. It contains a number of pendant rocks, in shape and colour resembling sides of bacon; hence its name.

* S. Cook, "Australian Wonderland."



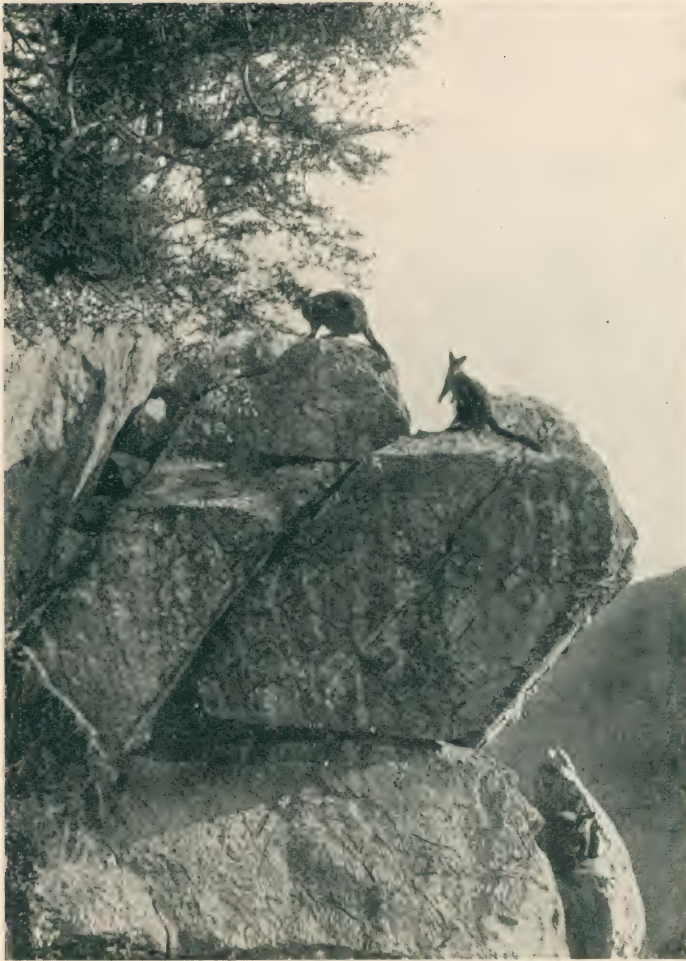
THE
CARLOTTA
ARCH.



The Carlotta Arch

is perched up above, and lies between the Devil's Coach-house, or Easter Cave, and the Grand Archway. It pleases the eye, whether the spectator looks at it from the roadway 200 feet below and catches a glimpse of the wooded slope beyond, or sits under its tinted fringe of stalactites and views the valley below. Inside it is from 40 to 60 feet high and 40 feet broad. It is reached either by ascending the flight of steps that rise from the upper entrance to the Nettle and Arch Cave and pass under it, or the visitor may take a path which commences opposite the Caves House, winds round the hill slope, and branches in several directions. One branch zig-zags directly up the hill, and drops down to a seat in front of the Arch ; another passes the Elder Cave, and may be followed thence either to the foot of the Arch or to its summit.

Having arrived at the latter point, the spectator stands on a narrow natural bridge, railed in on either



WALLABIES ON LUCAS ROCKS.

E. J. Coode Photo.]

side with iron standards and wire ropes. This bridge connects the rugged limestone bluffs which overlie the Coach-house and Grand Archway and form part of the huge natural limestone dam which stretches across the creek valley. The view is superb, and is only excelled by that from the Lucas Rocks. Looking back, the entrance to the Elder Cave nestles in a hollow below, while the zig-zag road to Oberon is seen mounting the steep hillsides. South-easterly the road to Mount Victoria winds its way above the rocky bed of the Jenolan River, the music of whose waters can be heard as they tumble over rocks and form cascades on their journey seawards. The visitor may now partly retrace his steps and take a peep into the Easter Cave from one of the railed-in openings in its roof, named the Look Down, and finally travel through it on his way back to the Caves House. Or he may walk to the Pinnacle Rocks, which stand 320 feet above the floor of the Grand Archway, and from thence reach the path homewards or continue his wanderings to the Lucas Rocks. The most complete view of the Caves House and its surroundings, and of the direction and extent of the craggy grey limestone ridges, is to be obtained from the summit of the Lucas Rocks, 500 feet above the roadway. The Lucas Caves lie under their slopes. The Rocks

are also reached by a track which commences opposite the Caves House, passes along their western side, and terminates at their southern end. The view from the top well repays the little extra exertion needed



THE DEVIL'S COACH-HOUSE AND G.P.O., SYDNEY (DRAWN TO SCALE).

to climb up to it. Below is the House, looking, with its romantic environment, like some Swiss chalet. All around are views of rock and crag and mountain ravine, relieved by glimpses of the roads to Tarana and Mount Victoria as they wind their serpentine way up the mountain slopes. Wallabies may be seen here and there leaping from rock to rock, or peering at the visitor from some sheltered nook or crevice. A clear view of their agile and graceful movements is obtained, as they are not molested, and are therefore comparatively tame.

“ Perched upon this pinnacle, with terrible depths

The Devil's Coach-house, or Easter Cave.

In prehistoric ages this arched cavern was a surface waterway of the Jenolan River, which, unlike the channel of the Grand Archway, nearly follows from north to south the general direction of the Caves limestone. In flood-time, surplus waters still pour in a foaming torrent over the rock-strewn floor of the Cave, but in ordinary seasons the creek drainage sinks underground some 3 miles

* S. Cook, “ Australian Wonderland.”

up stream, then probably finds its way under the Mammoth Cave, reappears in the "Underground River" of the Imperial Cave, and finally gushes out of the rocks a few feet above the bed of the Jenolan River, at the eastern end of the limestone bridge over crossing. The water is utilised as a motive power for the electric light. The southern entrance to the Coach-house is somewhat narrow, and is partly blocked by a massive rock standing sentinel-like at its mouth. At 60 feet from this entrance the cavern opens out to an enormous size. It reaches a height of 160 feet. At its northern entrance it is about 120 feet wide. It is about 400 feet in length, and can be traversed from end to end without difficulty. Standing within the Cave, the spectator is assisted in his endeavour to realise its immense size by the light thrown in from openings high up in the roof.



NORTH ENTRANCE, DEVIL'S COACH-HOUSE.

From the surface at one of these openings to the floor is 280 feet.† Looking north, the massive stalactite-fringed arch frames in Nature's grandest style a lovely picture of the romantic wooded glen beyond. "At one moment, the vastness and silence under the dome fix the attention of the observer on the mute but beautiful forms Time has slowly amassed under it; at the next, the wild song of the lyre-bird re-echoes through the cavern and draws the eye to the sunlit slopes without."* Now and then a wallaby may be seen hopping from rock to rock on its way to some sheltered recess. Near the southern end, the cavern has an upper chamber named the Nettle Cave, described elsewhere. From the edge of this chamber is obtained the finest view of the Coach-house. Below it are the huge boulders and rocks through which the storm-waters tear their way in flood-time. Many of these rocks are so highly polished by the feet of wallabies that their surfaces now resemble glazed earthenware. Others are ripple-marked, and "reflect a thousand jets of light from the facets of their crystals."* The sides of the cavern are seen to be adorned by pinnacled columns or gracefully-folded curtain stalactites. The roof is decorated from end to end with stalactites up to 20 feet in length. These formations are tinted in a most varied and charming way, and enchant the spectator with Nature's painting. Some are tinged with delicate hues of green, others with blue, or orange, or yellow, while others again have tints of pink or fawn.

The Nettle Cave.

This Cave received its title from the abundant growth of nettles on the slopes outside. It is an upper chamber of the "Coach-house." The light in it varies from daylight to twilight and semi-darkness. It has two entrances; the upper one will be noticed in the description of the Arch Cave; the lower one is an iron-barred gateway at the top of a steep flight of concrete steps, which rise from near the eastern end of the Grand Archway. The track inside is circuitous. At a short distance, and a little to the left, is the SCULPTOR'S STUDIO, so called because here groups of stalagmites occur which have the appearance of unfinished statues. These are surrounded with massive pillars, columns, draped stalactites, dainty

* "Railway Guide," 1886.

† See illustration, page 36.

grottos and alcoves. Many grotesque forms are modelled and pictured. Here is the likeness of a woman with a large bonnet. To the right of the Studio is a gloomy hole, which descends into the Coach-house. It is railed off for the protection of visitors. A little further on are stalagmites which represent a bird and animal in combat; another is like a gigantic mushroom. Looking back in the direction of the Sculptor's Studio is the Cemetery, where the stalagmites look like tombstones. In the *debris* on the floor may be seen myriads of small bones of bats, &c., which tell of the lapse of time since the cavern had its first occupants. A short distance to the north, where an opening in the Nettle Cave joins an inner wall of the Coach-house, a scene of surpassing loveliness is unfolded before the spectator. In front are the tinted stalactites, columns, and draperies which embellish the Coach-house, and have been referred to in the description of that Archway. At the upper end of some stone steps cut out of the rock are the beautiful bright green formations termed THE WILLOWS, because of the resemblance they bear to the graceful foliage of the willow. Above these is a stalagmite like a fat sheep; another resembles a petrified, gnarled, and knotted tree-trunk, 2 feet in diameter. The Guide will also point out in various places other fantastic resemblances to forms in the world outside, such as The Hand of Joshua, immense Lobsters, The Judge's Wig, an infant in bold projection on the western side of the Coach-house, &c. The BALL ROOM is now entered. Placed here and there between the ceiling and the level floor of this little "Plateau of Terpsichore" are the CORINTHIAN COLUMNS, groups of columns and stalagmites which are all more or less attractive. To the right of the steps leading to the Ball Room "is a figure like an orator in the act of exhortation. The forehead is bald, long white locks are flowing on to the shoulders, one arm is upraised, and the pose gives an idea of earnestness and force. In front, just below the bust, is a reading desk fringed with stalactites."* The Nettle Cave is of exceptional interest and beauty. Although it contains none of the delicate formations of the other Caves, the visitor to Jenolan should not fail to inspect it, and, if possible, when it is lit up by the golden rays of the morning sun as they pass through the Coach-house, for then Nature's master-hand in the art of colouring is best appreciated. Near "The Willows" stand the wooden flight of steps leading into the Arch Cave.

* S. Cook, "Australian Wonderland."



THE ARCH-CAVE.

long. It is entered from the Nettle Cave, near The Willows, by ascending a staircase and a few steps cut in the rock. It is shortly noticed that each foot-tread gives out a hollow sound, and indicates

The Arch Cave.

This cave at one time possessed considerable beauty. Its discovery followed closely upon that of the Main Archways, long before the appointment of a caretaker. It therefore suffered from the depredations or carelessness of such early visitors as had no regard for any loss that posterity might suffer at their hands. It is related that "a Goth from Bathurst destroyed no less than five columns in 1860."* The Cave, however, still contains much that is beautiful and worthy of inspection, and is about 100 yards

* S. Cook, "Australian Wonderland."

how thin is the floor which separates this part of the cavern from the Nettle Cave underneath. The passage is now wide and roomy, and is decorated here and there with many stalactitic and dripstone forms. In the centre is a slender and graceful column reaching from ceiling to floor. Two tiny stalactites may be seen which are still in course of formation. They are barely an inch long. As they have been under observation for the past fifty years, they form an object-lesson on the slow growth of some of the formations, and consequently on the irreparable damage that is done when any of them are injured. Proceeding along the passage, on the right are some draped stalactites of a brownish tint. The end is reached at "The Belfry," so-called from a group of irregular and massive stalactites which give out musical sounds when struck. These sounds may be heard in the Nettle Cave, and, what is more singular, in the Imperial Cave also. A return is now made along the passage, some stone steps are ascended, and an exit is made at an iron gate which forms the upper entrance to the Arch and Nettle Caves. Easterly, the limestone is precipitous, and access is therefore cut off in that direction. Westerly, a steep flight of stone steps rises under the Carlotta Arch and terminates near the track which leads to the house.

The Lucas Cave.

This Cave is named after the Hon. John Lucas, M.L.C., who for some years represented the constituency in which the Caves are situated. It lies below the eastern slope of the Lucas Rocks, on the southern side of the Jenolan River.

"The floors are for the most part strewn with blocks of limestone, many of large size, which have fallen from the roof and sides. In several places, high above a man's height, are to be seen old water-lines, so strongly marked that it is evident the water level must have remained constant for considerable periods of time. Apparently, there have been two periods of dripstone growth, one of remote age and local in character, in which stalactites are remarkably thick. The newer growths exhibit fantastic and beautiful forms, from the hollow reed and semi-transparent veil to the snow-white dome stalagmite, the crystal-fringed pool, the wave-lined floor, and the crooked fringed shapes that are turned in all directions." *

* L. H. G. Young, "Railway Guide," 1886.

The old entrance was reached by following a serpentine track over the limestone mountain. Mr. F. J. Wilson, the late caretaker, discovered a new means of access through the southern wall of the Grand Archway. This convenient route has now been made available by enlarging natural tunnels, levelling their floors, and erecting stairways. Sitting in comfort within a railed-in platform erected on the cliff face, one is able to appreciate the scene of majestic beauty which is there presented. To the left is the entrance to the Grand Archway and the pinnacled summit of its overlying mass of limestone. In front are the precipitous bluffs, in which are the entrances to the Carlotta Arch, the Nettle Cave, and the Devil's Coach-house, daintily festooned with creepers and the evergreen foliage of indigenous shrubs. Below lies the beautiful little limestone bridge, and the fine sheet of water which supplies power to the dynamo, while ever and anon the Jenolan River waters give out melody as they tumble over its rocky bed, which winds through densely-wooded and picturesque gorges. There are two wooden stairways in the passage leading to the Lucas Cave. Near the top of the second one is an opening to the cliff face. The next point of interest is at the foot of some steps in the Ante-room, where a stalagmitic deposit occurs which resembles a huge jelly-fish, and is named "The Medusa." Overhead is a group of stalactites, while the walls of this part of the passage are marked by attractive stalactitic formations. The visitor shortly enters the vast cavern named the CATHEDRAL, at the foot of the steps leading from the old entrance. High up is seen a whitish canopy, which has been named "The Pulpit Rock" or "Organ Loft." On the sloping floor, to the left, are several large dome-shaped stalagmites, and at the end of the cavern is another, much more massive than the others, but similar in appearance. Above it is a remarkable representation of a man's face on the wall. The lofty roof of this majestic cavern is illuminated by electric lights which shine on sparkling white shawls 100 feet above the spectator. The visitor then arrives at the SLIDE, a slippery incline down which it was at one time necessary to make undignified progress. Steps are now cut to the right, and lead through a passage which is more or less decorated with stalactitic growth. At the foot of these steps is the MUSIC HALL, so called from its fine acoustic properties. Here a weak voice sounds full and sonorous. The chamber is low. Its floor was at one time white and beautiful, but the tramping of many feet has rendered it commonplace. To the left of it is a pretty little grotto containing pure white stalactites. Still descending, the SHAWL CAVE next claims

attention, at the entrance to the EXHIBITION CAVE. On the sloping roof are some white lime draperies, and groups of banded and frilled scarf-like sheets of lime which hang in graceful folds, and are very beautiful. The sloping roof is of considerable length, and is faced by a wall which is more or less attractively draped by stalactitic growths.

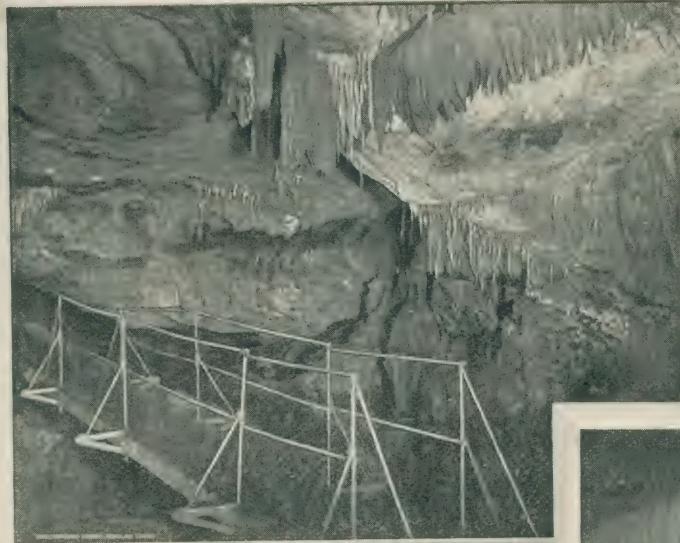
Here and there are formations like frozen waterfalls. At some distance on the left, on the perpendicular face of a huge rock, hangs "The Curtain." This is a white and tinted formation, with long, straight, but still graceful folds. It appears to be about 15 feet in length and in width. To the right are some tilted stalagmites. Passing on, the visitor stands in the centre of the vast Exhibition Cave, which is 250 feet long and 140 feet broad, and of considerable height in places. Close by is the BROKEN

COLUMN, which attracts universal interest, and has been pictured in many photographs and illustrations. It was

at one time a grand pillar, uniting roof and floor. It appears to have been gently fractured by the sinking of the massive rock at its base,



THE BROKEN COLUMN.



THE BRIDGE.



THE CURTAIN.

and now consists of two sections, the lower part being separated from the upper by a space of 10 inches. As the Guide throws an additional electric light, or varies the light over the cavern, tinted draperies and sparkling stalactites are seen to ornament it here and there. To the right is THE CANOPY. Here the lime has coated graceful curves, and then formed stalactitic draperies, which terminate in a fringe of beautiful long stalactites. Near at hand are fantastic forms, such as a blackfellow's "nulla nulla," a woman and child, an arm and hand, &c. In front is THE PROSCENIUM. This is a large arched opening fringed with stalactites and decorated above with reddish-brown shawls marked with bands of a darker tint. On its right side are some beautiful formations, which include a fine semi-transparent white shawl, and a broken column much smaller than the one already noticed. In process of time, the broken parts of this column will probably re-unite, for three small stalactites are now growing from the edges of the base of the upper part. The left side of "The Proscenium" is handsomely decorated. Here and there on the "Stage" are small stalagmites, which may be taken to indicate the actors. The whole is brought into handsome relief by reflected electric lamps.

Passing through "The Proscenium," a crystalline and amber-tinted formation named "The Topsy Cake," is seen; then a fine white column. An ascent up a long flight of steps on the right takes the visitor to the Mafeking Cave.



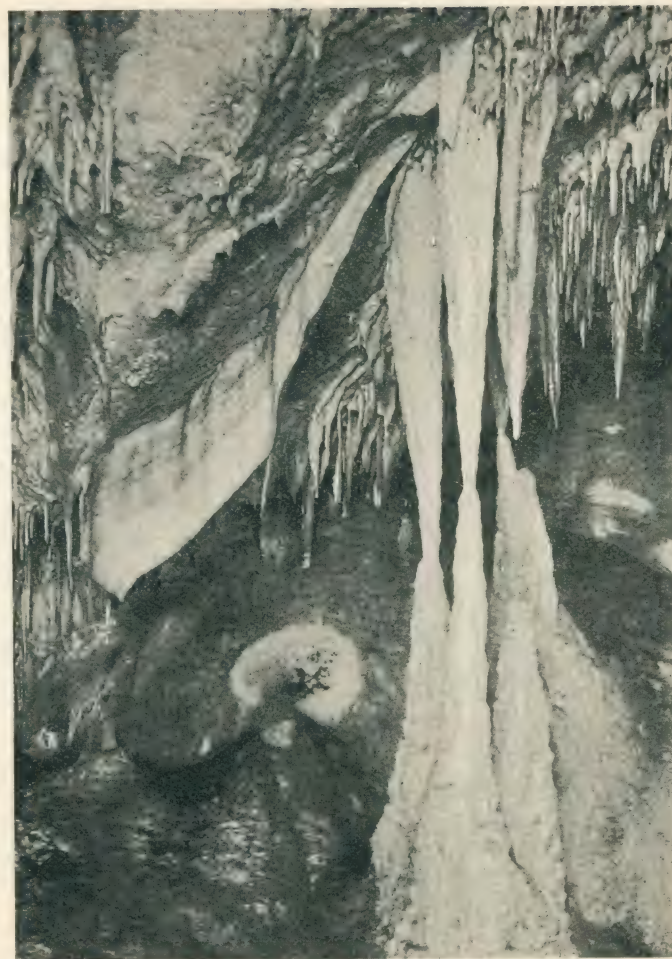
THE PROSCENIUM.

Mafeking Cave,

10 to 20 feet broad, 80 feet long, and from 15 to 40 feet high. This superb cavern contains dainty grottos packed with stalactites, silk-like shawls, translucent white pillars, &c. Sparkling cascade formations descend from roof to floor in tints of amber, brown, and terra-cotta, and are surmounted by other charming forms of dripstone. Near the entrance is a stalagmite named THE GREEK QUOIT PLAYER.

Lucas Cave—*continued.*

Returning to the main Lucas Cave, a roof decorated with small stalactites is succeeded by a massive crystalline cascade. Rising from the cascade is a conical stalagmite, which has been named "FUJIYAMA" (Fujisan), from its resemblance to a sacred mountain in Japan. Under the ornamental roof formed by the Cascade is THE JEWEL CASKET, one of Nature's treasure-houses. "The Casket" is contained in a small recess, and can be viewed by one person only at a time. The rock which forms its roof has been tilted at some period, and the fragile crystalline pendants hanging from its ceiling are not perpendicular. The floor and sides sparkle with the light effected from innumerable tinted crystals, which dazzle the eye with their splendour. Gems of all



[O. Trickett, Photo.] SHAWL AND PILLARS, MAFEKING CAVE.



kinds—diamonds, opals, agates, &c., appear to have been scattered about with a prodigal hand. The pathway now runs north-westerly along the eastern boundary of the Exhibition Cave. ("The Canopy" is near the limit of its western boundary.) On the right of the pathway are the TERRACES, a series of beautiful white and cream-coloured formations, which here and there are



THE MINARET, RIVER CAVE.

like cascades whose waters had been congealed as they descended from ledge to ledge. Among other objects of interest is a formation which resembles a water-jug artistically designed in terracotta. Passing on, and then looking back, a stalagmite is seen in which there is a remarkable likeness of Sir Henry Parkes in profile. English visitors see in this stalagmite the features of Lord Salisbury. Looking forward, "The Bishop" stands on the summit of a large stalagmitic formation. Among other diminutive stalagmites is one said to resemble Her Majesty the Queen, with crown and coronet. Further along, when the arc light is switched on, the head of a red Indian is disclosed, and the charming grotto named the HOME OF THE FAIRIES comes into view. Attractive brown and crystalline draperies hang from the edge of the ledge which forms its floor. The grotto contains innumerable white and brown pendants and columns, and some beautiful stalagmites. A huge chasm is here spanned by an iron bridge. Forty-five feet below this bridge, 250 feet below the dome of "The Cathedral Chamber," and over 500 feet below the summit of the Lucas Rocks outside, an incandescent light illuminates the pellucid waters of a still and silent pool some 16 feet deep. This pool is connected with the waterway which drains the belt of limestone on the south side of the Jenolan River, and forms many of the caverns in the River

Cave. Looking across the yawning gulf the view is sublime. Huge rocks lie piled one over the other, as far as the eye can reach, and mark in a vivid way the manner in which the cavern was formed. Successive pools of water caused the floor to subside periodically until the present permanent water-level was reached. After each subsidence, rocks—some of them many tons in weight—have fallen from the roof and sides of the cavern and so formed its rugged and broken floor. The end of the Exhibition Cave is now reached, and the visitor enters the passage which leads to the LURLINE CAVE. On the way the Guide calls attention to a formation like an old lady in the act of stooping. The Lur-line Cave contains numerous grottos and recesses embellished with beautifully tinted and coral-like formations, and some fine white stalactites and columns. Further along is the BONE CAVE, so called from many fragments of bones being found in it when first discovered. (The BONE CAVE overlies the SKELETON—see Skeleton Cave.) In an alcove off this chamber, a stalactite 10 feet 8 inches long hangs within a cluster of attractive stalactites and



O. Trickett, Photo.]

THE UNDERGROUND RIVER "STYX," RIVER CAVE.

columns. Near at hand is the IRISH CORNER, containing curious formations like potatoes. Next comes the SNOWBALL CAVE, whose roof and walls are covered with deposits like snowballs and cauliflowers. Finally, a beautiful crystalline formation named the CRYSTAL FOUNTAIN, with overhanging stalactite and the fossil remains of a wallaby, are passed on the way to daylight in the Grand Archway.



O. Trickett, Photo.] THE FURZE BUSH.

The River Cave.

By the discovery of the "River" branches of the Lucas Cave (1903-1904), over half a mile of caverns of unrivalled beauty and grandeur has been added to the revealed treasures of the Wonderland of Jenolan. These branches are all contained in the system of channels which have been excavated by the underground waters that run from south to north and find their way through the western bank of the Jenolan River, opposite the outlet of the underground waters of the Imperial Caves.

The River Cave.

Starting from a point about 25 feet from the western end of the Lucas Bridge, a descent is made to the mammoth tumbled rocks forming the floor of the Exhibition Cavern. From here, a pathway leads down to the present waterway, and an ascent is then made into the TOWER CHAMBERS. In these will be found groups of beautifully tinted pillars, superb cream-coloured terraced stalagmites, including that named THE MINARET.

A ledge at the end of the Tower overhangs THE PRECIPICE, which terminates in a partly-concealed pool varying in depth

from 35 to 45 feet, according to the season of the year. From this ledge a weird and awe-inspiring scene is presented to the spectator—sombre walls, whose contour is lost in inky darkness, bound a chasm which seems to terminate in the far distance in a dismal pool which has been named “THE STYX.” On descending, however, the gloom is rapidly dispelled and a stream of pellucid water, illuminated from end to end by electric lights, is disclosed. This is crossed in a comfortable punt. On leaving the punt a fine pilared recess—NEPTUNE’S CABINET—is seen on the left. Following along the RED PASSAGE a cavern is reached which contains a series of beautiful groups, including THE SISTERS, THE QUEEN’S CANOPY, and THE SENTRIES. Ascending thence to the JUNCTION CHAMBER, the SHOWER OF SHAWLS comes into view. This beautiful formation is one of many amber and chocolate-tinted mantles which decorate and drape a series of rounded ledges. Above these, the walls are graced, tier on tier, with massive fluted pillars, draperies, and cascades. Still higher are the lofty and grand MONS MEG Caverns, which are referred to later on.

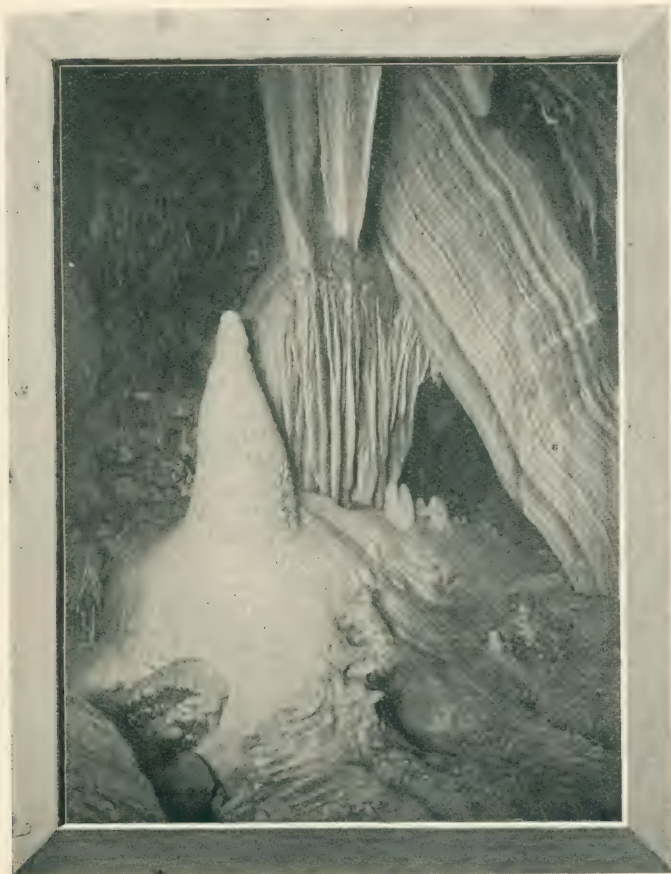
Leaving the “Shower of Shawls,” a network of passages, commencing with the HAMMER CHAMBER, is reached. Several of these zig-zag their way into the



O. Trickett, Photo.]

THE GRAND COLUMN.

underground waterway, while others communicate with upper and spacious caverns richly furnished with elegant dripstones, among which may be noted ESTHER—a fine white stalagmite, and a crystalline deposit



O. Trickett, Photo.] THE SHAWL. (Mons Meg Branch.)

named THE FROZEN SEA. Following the most direct route, narrow corridors lead to curious deposits which resemble the potatoes of "The Irish Corner" near the Bone Cave, passing under THE CAMEL'S BACK, past the entrances to the "Temple of Baal," and the Orient Cave (described later on), the FURZE BUSHES, and "The White Gum Tree"—fantastic, yet exquisite, and dainty designs in lime of deciduous vegetation—are brought to view. Deposits of clean sand carpet in a fitting way the approach to "Olympia." In this gorgeous chamber the central figure is the "Grand Column"—a mammoth amber-tinted fluted stalagmite—supported by a secondary column, from the base of which the crystalline floors descend in graceful curves to a symmetrical mantle hanging over a beautiful bower. All round the "Grand Column" are pillars, stalactites, shawls, and draped recesses; some majestic and imposing; others diminutive, but all resplendent in shining tints of varied hues. A cloisterlike room and narrow passages lead thence past the long shawl named THE SOUNDING BOARD to the splendid TENT CANOPY or WHITE TEMPLE, at the back of which are snow-white pillars and clear pools in crystal basins. Next comes a reddish-tinted mantle which hangs from a ledge for

25 feet or more and partly conceals some very fine bunches of translucent "Mysteries." Below this again, a snow-white stalagmite faces another but smaller mantle, under whose protection nestles a grotto of beautiful lime deposits. Further on the cavern narrows, but contains a series of enchanting and fairy-like bowers, festooned and garlanded with crystal lime sprays which carpet the floors, jut out from the walls, or grace the ceilings. In the near vicinity are a number of low and tortuous passages, which are mostly unsurveyed and are unlikely to be opened for inspection. These contain formations known as "The Fortifications," "Enchanted Forest," "Red Temple," "Fairyland," "Eddystone," "Diana's Grove," "Daisy Bed," "Hanging Garden," &c.

**Mons Meg
Branch.**

This is an upper chamber running from the formation referred to as the "Shower of Shawls" to "Olympia." It is lofty in places—upwards of 40 feet—and is named from a huge fallen pillar, 22 feet long and 5 feet in diameter, which lies on the floor like some ancient dismantled cannon.* Near this pillar are some beautiful terraced stalagmites, and a superb banded shawl, 20 feet long and 4 feet broad, which is especially interesting on account of its unusual size. Looking back from a point above these formations, a splendid group of shawls and drip stones in tints varying from a delicate amber to a deep chocolate are revealed by an electric arc lamp. As the path upwards is followed, the skeleton of a bat embedded in the side of a small stalagmite may be noticed. Next, a group of columns are seen forming a background to a tall yet slender white column, of beautiful and chaste design, named CLEOPATRA'S NEEDLE. Near the



O. Trickett, Photo.]

THE TENT CANOPY, OR WHITE TEMPLE.

* Mons Meg is the name of an ancient cannon standing outside Edinburgh Castle.

latter are floors with deep frillings of crystalline deposits dividing irregular basins which lie at the foot of sparkling walls. From a coign of vantage near the upper rims of these basins an imposing view is obtained of the general features of the lofty and capacious caverns which extend downwards to beyond the Mammoth Shawl. Ascending to the highest point in the cavern, a yawning chasm—a veritable pit of Eblis—opens downwards to the lower passages near the stalagmite “Esther.” On one side of this hole is a large shawl united to a stalagmite. To the right is the “Grey Grotto.” Descending by an uninteresting passage, whose walls are marked with the scratches of bats, access is gained to a superbly decorated portico, forming the entrance to the Chamber known as “Olympia,” and which has already been described.



SHAWLS AND ALTAR,
THE TEMPLE OF BAAL.

The Temple of Baal.

This is the western branch which leaves the River Cave a short distance north of the “Furze Bushes.” After travelling for 250 feet through narrow and tortuous passages in a general westerly direction and passing on the way some shawls, a large cavity named THE DRAGON’S DEN and some MYSTERY formations, an entry is made into the magnificent cavern, THE TEMPLE OF BAAL, which is 200 feet long and reaches a width of 60 feet and a height of 90 feet. In the centre is a superb, glistening, and pure white stalagmitic mass 30 feet across; on either side are white and reddish-banded shawls of great length, hanging from chocolate-tinted walls which curve upwards to a lofty dome. Artistically grouped against the chocolate background are clusters of curled and twisted lime sprays. One collection is named “Moloch’s Grotto.” The whole forms a scene of majestic and impressive beauty. Near the western end of the Cavern is the GEM OF THE SOUTH CANOPY. This is an entrancing piece of Nature’s unrivalled workmanship. Entwined with delicate

filagrees are silk-like shawls and slender translucent pendants, from each of whose tips hangs a shining crystal drop of water—

“Half hesitating as a maiden might,
To seek the wonders of an unknown step
And launch itself in space.”—HAVILAND.

Dainty pure white stalagmites and pillars add their quota to the beauty of this canopy. Looking back, an upper chamber is seen in which a wealth of chocolate fringes, billows of crystalline rocks, and innumerable other fantastic lime deposits meet the eye.

The Orient Cave.

“Thick with sparkling Orient gems,
The portal shone inimitable on earth.”
—MILTON.

The “Orient Cave” exhibits splendid panoramas of cascades, placid pools with crystalline floors, massive columns, and pillared halls decorated with warmly-coloured tapestries. Here and there dainty nooks of great beauty add to the general effect. It is the most recent addition to the branches of the River Cave to be opened for public inspection. Its caverns rise above the River Cave and are entered from an opening opposite the “Temple of Baal.” The main direction is south and south-west.



Kerry & Co., Photo.]

THE COMMONWEALTH PILLAR.



DELICATE LINE
TENDRILS.
THE ARABESQUES.



THE DIAMOND WING.
ORIENT CAVE.



Cemented stairways lead up to a short passage on the left, where the EMPEROR'S COLUMN is flanked by a canopy of twisted lime sprays and pillars. Next comes THE ARMOURY, with a collection of rounded staves and a "Waterfall." This is followed by a crystal pool. A platform gives an easy view of a wealth of varied shaped and tinted formations. It is erected on the edge of a sparkling basin, fringed with the superb MARUKUPU CRYSTALS, which occur in amber-tinted bunches. Here the cave divides into two branches.

An ascent is made up through mammoth canopies and daintily-carved columns, among which are beautiful pendants, one of which has been named GRANNIE'S SHAWL. This is like a folded piece of drapery

Western Branch. formed of soft wool with knotted fringes. In the background are rippled walls with bright and creamy surfaces. Still rising to another platform THE JUNGLE appears,

Orient Cave. where eccentric lime sprays peep out among snowflakes and amber-tinted draperies. On one of the "Mysteries" THE WAGTAIL'S NEST is seen.

Next is the EGYPTIAN COLONNADE, where imposing terra-cotta shawls, tapestries, and pillars, 30 feet high, appear in bold relief among softly-tinted walls, ornamented here and there by massive fluted stalagmites.

An entry is now made into the COMMONWEALTH DOME, 100 feet from roof to base, having for its central object THE PILLAR OF HERCULES, a mammoth terraced pillar which has for satellites a striking collection of tall stalagmites named "The Group of Pilgrims." Placed in convenient niches on their sides are the STATUETTES OF THE SAINTS. The surrounding walls are profusely decorated by coloured cupolas, minarets, and fringed curtains—all exquisitely modelled.

At a lower level is a dainty little grotto, resplendent with sparkling crystals, on which rests a wonderful and fragile sheet of lime formed like a tray with scalloped edges, fashioned in thin papier mâché. Lower still are some shawls of exceptional interest, being marked with alternate broad dark and pure white and translucent bands. These shawls have for their neighbours others reddish brown in tint. Here is also a splendid array of "Mysteries" or "Helictites," which are unusually large and distinct.

The descent of a short and final stairway ushers the visitor into an interesting grotto from which an exit will be constructed, giving a level and short passage to the Caves House.

Returning to the point at which the Western branch commenced, the Eastern or Ribbon branch is entered.

**Ribbon Cavern or
Eastern Branch.
Orient Cave.**

At the summit of a flight of steps is the DIAMOND WING, studded over with grotesque little lime crystals and surrounded by a varied group of beautiful forms. From this point the passage is comparatively level, but somewhat narrow.

THE ARABESQUE now claims attention. This is a marvellous cluster of delicate trendrils twisting in and out, under and over filigrees and fret-work, and is a unique example of the grotesque forms which lime deposits may assume. In the vicinity, crystals like branching antlers serve to carry silk-like streamers. Occasionally a be-



BRIDGE LEADING TO SKELETON CAVE.

of diminutive translucent white pendants, and a long series of chocolate crystals projecting from the wall like brackets, while garlands of crystals form festoons here and there. An impressive scene is found in the terminal chamber, where THE SHRINE rises in its beauty from a rippled floor of dark crystals. This fine structure of white and tinted pillars and stalagmites forms a fitting end as the curtain is dropped on the glories of the Orient Cave.

ribboned garland seems to glisten with a silvery radiance. Close inspection shows this is due to tiny rills of lime-charged water, which are silently yet imperceptibly adding further floral tributes.—

“The ever playing shuttles which weave the fairy fabric.”

Opposite is a basin with a sparkling floor, then the passage winds through charming grottos, myriads

The Skeleton Cave.

The Skeleton Cave.*

Proceeding about 80 feet north-westerly down the "Underground River" from the stairway leading up to the Main River Cave, after crossing the water twice on the way by means of arched concrete bridges, an entry to the Skeleton Cave is



O. Trickett, Photo.]

THE SKELETON.

found on the eastern bank. During periods of flood the water rises, and access to this cave is not then possible. It extends north-easterly 250 feet to a deep pool which appears to be part of the main waterway, and thence westerly 200 feet. At 150 feet from the entrance the skeleton of an aboriginal lies partly embedded in the stalagmitic floor. It has probably lain in its present position for a period extending long before the colonisation of Australia. How the unfortunate man got there is difficult to conjecture, knowing the antipathy the Australian aboriginal has to any place from which daylight is excluded. It appears possible he fell through the opening from the face of the cliff high up in the Cathedral; thence, groping in the intense darkness, to have rolled and tumbled into the Bone Cave, and from thence through a chasm which appears to have existed at no distant date immediately above where the skeleton now lies. Perhaps future investigation may help to elucidate the problem. Beyond the place where the skeleton is located the cave is beautifully decorated. Among other chaste designs is

* R. Etheridge, junr., and O. Trickett—Annual Report Department of Mines for 1903, p. 137; Records Geological Survey of New South Wales, 1904, VII, Part 4, p. 325.

a charming bower in which a semicircle of translucent dripstones hang gracefully over a dainty crystalline basin filled with water which has been named the BATH OF VENUS.

“ No favoured eye was e’er allowed to gaze
on lovelier spectacle in fairy days.”

Within view of the bath, fine and imposing pillars and draperies frame the opening to an enormous cavern. A sheer drop here of 22 feet discloses a pool of beautiful clear water, 30 feet deep. Beyond this a series of splendid grottos, cascades, crystal shawls, and fantastic filagreees occur. Visitors here enjoy the fun of trying to drop coins through the wire-netting on to a mark on one of the ledges. (See “ Hospital Pool,” Right Imperial Cave.) To a beautifully white crystalline deposit, the name of THE DOVE’S WING has been given.

The Elder Cave.

This Cave received its name from an Elder Tree growing in its mouth, which is situated in a picturesque hollow near to and on the track leading to the “ Carlotta Arch.” It has been found impracticable to excavate passages such as those which make inspection so easy in the other Caves open to the public. The visitor should, therefore, be provided with a costume in which he or she can stoop, creep, or crawl, as occasion may require. It is also necessary to attend strictly to the instructions of the Guide to avoid the danger of accident. Having entered the iron gateway, a passage of some 80 feet, more or less ornamental, leads the visitor to a cavern into which the sun shines through a grated opening at the surface, and gives a pleasant glimpse of daylight. The journey is then continued downwards, and a rock known as the “ Butcher’s Block ” is passed. A ladder is seen further on, which leads up into the Lyceum Cave (late Elysium). The latter



O. Trickett, Photo.]

THE BATH OF VENUS.

is some 100 feet in length, but is not now particularly attractive, and is seldom visited. Opposite this is a hole which has been followed down into the left branch of the Imperial Cave. Passing onwards, care is taken to avoid a deep chasm which descends to the Right Imperial. The CRYSTAL CAVE is then entered, and the passages become more attractive. The first chamber contains a grotto, ornamented with stalactites and some draped formations. The left side of the chamber is decorated by some fine stalactites, a column, and some thin "shawl" formations. On the opposite side, a ripple-marked floor, a stalagmite, a cascade formation, a small grotto with crystalline deposits, and a few tinted pillars and stalagmites are successively viewed. At a short distance, a chamber is entered which contains some stalagmites and stalactites (the latter much mutilated), and a ledge of rock, under which are some dull-coloured, coral-like formations. A good view is obtained of another chamber, at a higher level than the last, which is very beautiful, although much mutilated. In it are many stalactites, stalagmites, pillars, and shawls; some tinted, others white. In a recess on one side is a small and pretty grotto. A return is now made, and a narrow and broken passage is entered. This leads to a fair-sized cavern. The visitor may here choose between two paths, one of which leads to the Jersey Cave (see below), the other to the Coral Cave. The latter will now be described. Descending directly under the chambers last traversed, a halt is made at the hole known as "Ridley's Short Cut." This is a chasm 56 feet deep, down which a visitor accidentally fell, and was found some time after in an unconscious condition. This once-dangerous spot is now protected by wire-netting. The CORAL CAVE is then entered. This beautiful cavern is over 150 feet in length, but its roof is low. Near the entrance, innumerable coral-like formations grace the walls and roof; on the floor are dainty little forms like pine-trees. Further on is a beautiful fringe of stalactites. Then the pathway passes over a very thin layer of formation, below which is a hole 12 feet deep, the sides of which are formed of gravel and drift. The end of the cavern is particularly beautiful; its floor, roof, and sides are covered with white deposits, of which some are like balls of wool or snow, or bunches of grapes, while others are coral-like. This cavern is of special interest, as its splendid decoration differs so greatly from that of the other Caves. A return is now made by way of the Imperial Cave.

The Jersey Cave.

A steep flight of steps rises from the foot of the chasm known as "Ridley's Short Cut."* From their summit a narrow passage leads to a hole through which an entry may be made from the Elder Cave. THE JERSEY CAVE is usually entered from the Elder Cave, after the visitor has inspected the latter. A descent down another flight of steps and an iron stairway takes the visitor to the narrow cavern known as THE JERSEY CAVE. In places the passage between the wire-netting does not much exceed 1 foot in width, and is therefore occasionally inconvenient to traverse. A white crystalline, drapery-like formation, some 20 feet in height, is first met with; this is succeeded by tinted pillars and stalagmites, having a white background, which is decorated by a fringe of stalactites. Further on are groups of curious stalagmites, encrusted with coral-like growths, some of which resemble fir-trees. Overhead, small reed-like pendants hang from a white roof. A very beautiful grotto is seen on the left, in which are some pure white crystalline stalactites, draped formations, and a dome-shaped stalagmite. A large chamber is then entered, in which is a dull-coloured "Cascade" formation. Further on, the roof is decorated by coral-like growths and slender pendants. Here is seen a stalactite which resembles a turkey gobbler's head. Opposite this is a diminutive grotto, with ornamental pillars and a terraced entrance. Peculiar and fantastic forms—one of which looks like the gnarled root of a shrub—columns, pendants, and coral-like growths continue to the terminal chamber. This is dome-shaped, and contains a few tinted and coral-like stalactites, and some reddish-tinted drapery formations.

The Imperial Caves.

THE IMPERIAL CAVES were named after the Prince Imperial of France, the news of whose death in Africa reached Jenolan at the date of their discovery. They were entered by Mr. Jeremiah Wilson in 1879, when in company with a number of other adventurous spirits he descended a chasm in the Elder Cave and landed on the floor of the Imperial Cave. Further exploration enabled him to find an entrance from the Grand Archway. This means of access was superseded in 1898 by a much easier route, also from the Grand Archway. Once through the iron gate which guards the entrance, the visitor enters the wonderful subterranean chamber where through long ages eternal darkness reigned supreme; now,

* See description of the Right Imperial Cave.

under the electric flood lights, the hidden beauties of the caverns and grottos are revealed to the entranced spectator. At a short distance from the entrance is the WOOLSHED Chamber, whose roof and walls are ornamented by deposits somewhat like fleeces of wool. The passage now branches into what are known as the RIGHT AND LEFT IMPERIAL CAVES.

The Left Imperial Cave.

An entry is made into this branch by ascending a flight of steps and an iron staircase; a pebbly drift containing fossil bones, named the "Gravel Pits," is passed on the way. A first halt is made at the ARCHITECT'S STUDIO. This cavern contains three lofty chambers, varying in width from 12 to 30 feet. Many fantastic formations which have been likened to architectural studies are met with in the "Studio." The chambers are also profusely adorned with a great variety of stalactitic and stalagmitic growths, some of which are very massive, while others are delicate and fragile. In a recess near the end of the "Studio" is a stalagmite, about 6 feet high, which tapers gracefully upwards from a base only two inches in diameter. After ascending a flight of steps, a short passage leads to the BONE CAVE. The floor of this cavern was, when first discovered, strewn with small bones—hence its name. Groups of stalactites hang from the roof, some of which are semi-transparent, while a few reed-like pendants may be seen in recesses in the walls. At a few paces further is the chamber named THE SHAMBLES. Here are numerous massive stalactites which resemble slaughtered sheep, sides of beef, &c. Returning by way of The Architect's Studio, the MARGARITA CAVE is next in order. This Cave was named after the wife of Lieut.-Colonel Cracknell, Superintendent of Telegraphs, when it was first illuminated with the electric light. It is remarkable for the large size of its stalactites. Near the centre of the chamber is a small stalagmite named "Queen Victoria." Just behind the latter is a form like a diminutive horse's head. A cavern named THE VESTRY is sometimes visited at this stage. It contains two passages one above the other, in which are some fine stalactites. The next chamber is the MADONNA CAVE, a large cavern, a part of which overlies the Right Imperial Cave, at a point where that Cave in its turn overlies the "Underground River." The Madonna Cave is about 60 yards long, 10 to 20 feet high, and

20 to 40 feet wide. It is profusely decorated by beautiful stalactitic growths, and contains many charming recesses. One stalagmite is known as "The Madonna and Child," although the resemblance is somewhat indefinite. Another small stalagmite on a rocky projection looks like a woman on horseback. At the back of the "Madonna" is a daintily-festooned recess named MINNIE'S GROTTO. Here are a profusion of delicate white pendants and some of the fantastic growths which have been termed "Mysteries." Beyond a long flight of steps is seen a face in profile, which has been named "Napoleon." To the right, near their foot, a narrow tunnel descends to the right branch and to the Underground River. The ascent of the steps and further progress along a serpentine passage brings the visitor to the WILKINSON CAVE, named after the late C. S. Wilkinson. At the entrance is the ANTE-ROOM, a highly-ornamented chamber. Near by on the right is a sparkling crystalline rock. On the left is a grotto in which the formations are like those of the "Crystal Cities" in the Right Imperial. The floor of this grotto is terraced, while from its roof hang clusters of lime deposits like coral. Further on is the SNOW-DRIFT. This is a glistening white mound, over which hang long thin semi-transparent stalactites. The "Snow-drift" is prettily set off by a shallow basin at its base, which frequently contains a little pool of clear pellucid water. A flight of steps is now ascended, to the right of which are numerous groups of stalactites. Near the summit of the steps an electric light illuminates a cavern 20 feet below, in which is seen a group of stalactites. A descent is then made down another flight of steps. On their left a glimpse is obtained of several thin white semi-transparent "shawls" of considerable beauty. At the foot of these steps is THE FAIRIES' GROTTO. This charming grotto contains innumerable pendants which have tiny and fantastic growths on their surfaces. Near a brown-tinted "drapery" formation are some diminutive and beautiful white semi-transparent "shawls." One stalagmite on the floor has been named "The Bishop." Turning back to the Madonna Cave two chasms are passed, down whose gloomy depths peeps may be taken to holes which lead to the Right Imperial and to the Underground River. The GROTTO CAVE is next entered. This cavern contains many fantastic and interesting formations, among which is a gigantic fluted column. The next halting-place is the LUCINDA CAVE. In the passage to it are many recesses of rare beauty. These nooks sparkle with calcite crystals, and are



THE MYSTERY.

decorated with innumerable fragile stalactites. The Lucinda Cave is lofty and of considerable width. From the roof depend myriads of tiny stalactites. To the right is a magnificent formation, like a cascade whose waters had become congealed in graceful curves as they descended from ledge to ledge. It is sprinkled with crystals which sparkle like diamonds. Near by are draped alabaster-like columns and a fringe of delicately-tinted pendants. At its base, the cascade spreads out in ripples and terraces which have formed a "series of basins, the rims of which run in and out like frilling, and represent in miniature the water-lines of pretty inlets. The edges of these basins are about 2 inches in height, covered under the frillings with sparkling coral forms. The ripple marks on the inside have perfection in every segment, and in every cell lurks tremulous light."* On the opposite side of the cavern are beautifully-banded shawls which hang in graceful folds. One of them is spotted with red, and has a red border. A small hole in the floor is seen which continues down to a chamber on the right of the iron staircase leading to Katie's Bower. In a tiny recess is a marvellously beautiful and

* After S. Cook.

fascinating grotto called the *DIAMOND GROTTO*. The aperture through which it is viewed is small in size. Its floor is composed of crystals of dazzling brightness, disposed in waves and curves. For a height of 6 inches its walls are covered with amber-coloured crystals; above these are others of paler tint. A tiny pillar is seen which is remarkable for its beauty. Its top is draped, and it stands on a base of rich yellow crystals. On one side of this Liliputian chamber is *THE ENCAMPMENT*. Here, inside a miniature fortification, a mass of coloured crystals represent a number of tents, arranged in rows with soldiers bivouacking here and there. On the wall above are some curious little clumps of fantastic and twisted lime deposits. Turning back and descending some steps, a marvellous canopy called *THE MYSTERY* is next viewed. This is an extraordinary but beautiful formation which projects 8 feet from the wall. It has grown in a most irregular manner. Some of the deposits of which it is formed project outwards, then twist or curl and terminate in a perpendicular pendant; others turn upwards; some twist and twine over and around each other and baffle the spectator in



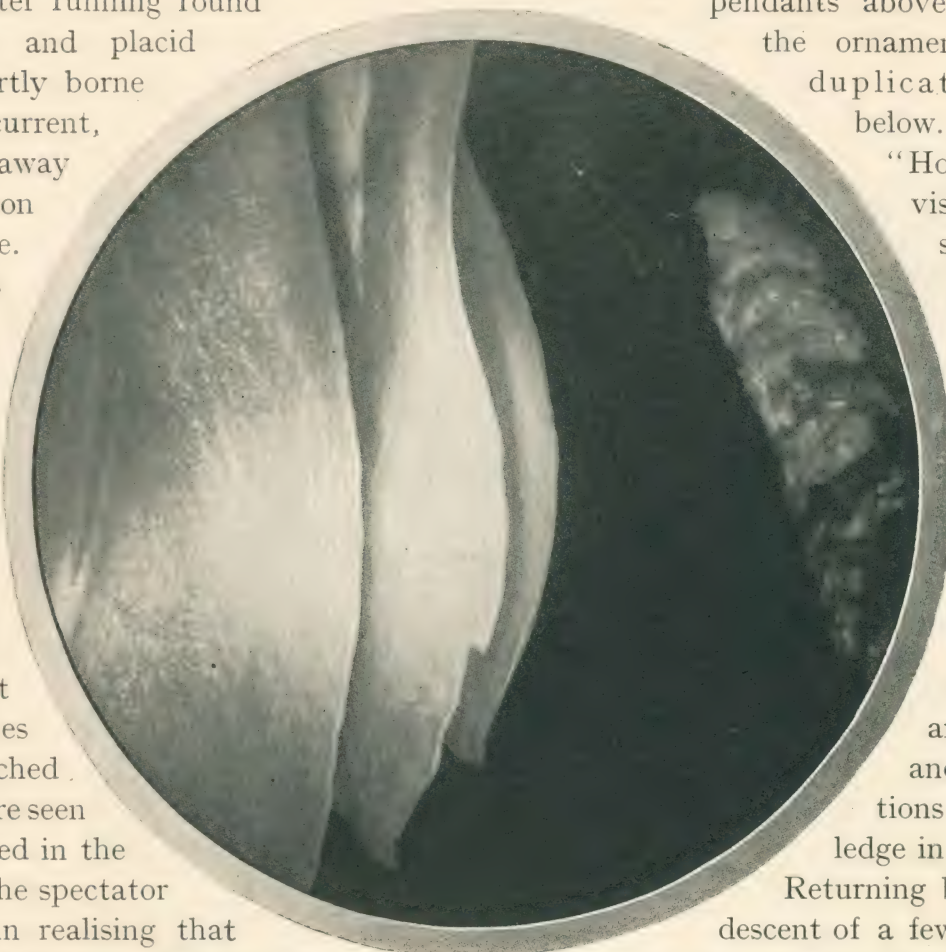
KATIE'S BOWER.

any endeavour to realise the laws which governed their growth. Below "The Mystery," and a little to the right, is a massive white and graceful drip formation, above which are some very fine draped and tinted stalactites. The opposite wall is beautifully decorated by terraced and variously-tinted formations. A column near at hand has been named "Pompey's Pillar." Descending an iron staircase, the visitor enters the large cavern named KATIE'S BOWER. Some steps are now ascended. Half-way up, on the left, is a cavity which is richly garnished with amber-tinted crystals. Above the steps the roof is seen to be richly ornamented with fringes, a cluster of fine pendants, and some draped forms of stalactites. To the right are several curtain-like sheets of formation, 30 feet long, which sparkle with crystals. They are of a reddish tint, and have a white border. The visitor now looks down into the terminal chamber. On the right of its entrance are white canopy-like formations brilliantly decorated with large crystals. Clusters of white and tinted stalactites depend from the roof, and delicate lime draperies hang in soft folds on the walls. In the lower part of this chamber are two basins of still and pellucid water, which serve to complete a picture of rare loveliness. The interiors of the basins are covered with crystals, which in one are clear and white, and in the other are of a terra-cotta colour. Brilliant effect is given to the beauties of this terminal chamber by reflected electric lights. An object of interest, if not of beauty, may be seen on one of the walls, in the shape of a petrified skeleton of a bat. KATIE'S BOWER lies under THE FAIRIES' GROTTO, mentioned above.

The Right Imperial Cave.

The first point of interest in the right branch of the Imperial Cave is found in the UNDERGROUND RIVER. At about 120 feet from the steps which lead to the Left Imperial Cave, a descent of 50 feet down a concrete stairway lands the visitor on the edge of the Underground River. Here the waters of McKeown's Creek, which find their way beneath the surface some 2 miles distant, are again seen. The current is considerable, but the water is so limpid, and its surface so unruffled, that the eye detects no motion until the Guide places a small piece of lighted candle on the water. The lighted taper coquettes for a while

with the back water running round projecting rocks, and placid pools, but is shortly borne into the main current, when it sails away rapidly and is soon lost in the distance. The channel is about 10 feet wide and 12 to 18 inches deep, and runs very nearly in the direction of the limestone belt—*i.e.*, from north to south. Following it upwards for a short distance, stalactites hanging from the arched roof of the tunnel are seen so perfectly mirrored in the water below that the spectator finds a difficulty in realising that the lower portion of the beautiful picture is simply a reflection of the rocks and



H. Phillips, Photo.]

THE SHAWL CAVE.

pendants above; each portion of the ornamented roof has its duplicated presentment below. Here is the "Hospital Pool," where visitors amuse themselves and at the same time give play to their benevolent feelings by dropping coins on to a mark in the transparent waters. The Bathurst and Lithgow Hospitals receive about £50 annually from these and similar contributions gathered from the ledge in the Skeleton Cave. Returning by the stairway, the descent of a few steps on the right of the passage takes the visitor to the GRECIAN BEND. This is the name given

to an attractive formation like the back of a lady's mantle. Below it is a variously-tinted cascade. Among a group of stalactites is one whose upper part is reddish in tint, while the lower part is white. Fragments of fossil bones may be seen in the rocks on one wall of the chamber. Returning to the main passage, another opening to the Underground River and caverns which lead upwards into the Left

Imperial is passed. A halt is made at a lofty chamber, known as RIDLEY'S SHORT CUT, which communicates with the Elder Cave, 56 feet above. At its summit an electric light gives the visitor a good idea of its height, and shows the point from which the Imperial Cave was discovered. To the right are attractive "cascades" and other formations, while nearer the spectator are two large white "shawls." One of these is 20 feet long and 18 inches deep.



CORAL GROTTO.

Further on to the left is a lime basin called the SALT PANS, which contain some coral-like deposits and small bones coated with lime. On the right is the CRYSTAL ROCK. This is a beautiful salmon-coloured formation of considerable width, sparkling with the light reflected from many crystals. Above it hang some attractive stalactites. The next point of interest is the SHAWL CAVE. Here are three fine shawls, hanging at right-angles from the sloping roof. One is about 14 feet long and 2 feet deep. Under the powerful light, these thin sheets of carbonate of lime are seen to be semi-transparent, and to be marked by bands of uniform width, whose colours vary according to the amount of carbonate of iron deposited with the lime. The roof is decorated by dark-red and cream-coloured stalactites, which hang in long fringes. One of these pendants is strangely like a plucked goose. Near the end of the chamber are three comparatively narrow "shawls." Passing to the left of some massive stalactites, ornamented with coral-like deposits, the CONFECTIONER'S SHOP then claims attention. Here are long rows of pendants resembling different forms of the confectioner's art. Under a sloping rock is one slender and delicate column, out of which has grown "The Lady's Finger." Next comes the CORAL GROTT. This fine chamber varies in height from 3 feet at the opening to 20 feet inside. It extends to the "Crystal Cities," and is decorated from end to end by pillars, columns, and pendants, many of which are covered by coral-like deposits. The grotto is not entered, but a fine view is obtained of its beauties with the aid of the electric lights. The passage which passes round the left side of the Grotto contains some fine white stalactites, and a reddish-tinted formation like an elephant's head and trunk. Standing alone on the right side of the passage is a very fine semi-transparent white stalagmite, 5 feet 8 inches in height, named LOT'S WIFE. This stalagmite owes its growth to the irregular drip from two diminutive stalactites overhead. A little further on is the chamber named the CRYSTAL CITIES. This beautiful spot is at the northern end of the



LOT'S WIFE.

Coral Grotto already referred to. Here lime crystals have taken the form of a group of Liliputian cities. Miniature walls and ramparts surround crystal forests and lakes, which appear to be crowded with inhabitants. A fringe of stalactites overhead adds to the attractions of this chamber. Close to the "Cities" is a "cascade" formation, marked by graceful curves dotted over by sparkling crystals. This



THE SHOW-ROOM.

is followed by the SHOWROOM, a richly ornamented cavern containing many draped forms. The central figure is a tapering white stalactite, which rests on a terraced stalagmite. Overhead, tinted and white stalactites depend from a roof rendered very beautiful by snow-white deposits. A little further on are the GRAND STALACTITES. These are amber-tinted and of elegant form, and are flanked by two fine columns, one on each side. The passage here also contains numerous smaller, but attractive, stalactites. On the floor a curious deposit resembles a shoulder of mutton. Opposite are some stalagmites like bottles. From the Grand Stalactites the passages branch. Taking the left passage first, a halt is made at a small recess named COOK'S GROTTO. Here are delicate pendants, many diminutive stalagmites, and a beautiful little column. Further on, to the left, are massive terraced and draped amber-tinted formations. Near these is a semicircle of columns, stalactites, and stalagmites, named JOSEPHINE'S GROTTO. On the lower part of the sloping roof are bunches of white pendants. The GRAND ALABASTER COLUMN, 14 feet high and 2 feet in diameter, is now seen on the right. In close proximity are four smaller pillars, two of which are joined together near the top, and are known as



THE GRAND STALACTITES—RIGHT IMPERIAL CAVE.

the "Giraffe's Fore Legs." On the left is a formation named "The Smoked Ox Tongue." This is succeeded by "The Mysteries," which are not so large as "The Mystery" in the left branch of the Imperial Cave, but are decorated by similar fantastic and grotesque forms of lime deposits. Some of these are delicate and beautiful, but puzzle the spectator to account for the many peculiarities of shape which present themselves. Close to the "Mysteries" is THE BATTLEFIELD. Here, in a diminutive and beautiful nook, are multitudes of curious forms, which are not unlike soldiers fighting in a field scattered here and there with war impedimenta and dead and dying warriors,



G. A. Hills, Photo.]

CRYSTAL CITIES OR FORTIFICATIONS.

recalling to memory Dorè's picture of Dante's "Inferno." A figure is seen like a stag leaping from a rocky precipice into space. A few steps further and NELLIE'S GROTTO comes into view. This finely decorated spot is on the left-hand side of the passage, and is between 3 and 4 feet high. Its outer edge is formed of a semicircle of stalactites, columns, and stalagmites. On either side is a long fringe of tiny stalactites; one of the stalagmites is singularly like an artistically-designed candlestick. About 25 yards north of Nellie's Grotto is THE VESTRY. This chamber contains a large, irregularly-shaped column, and a group of stalactites adorned with coral-like deposits. Shortly after leaving The Vestry, a pathway, some 300 feet long, mostly cut through drift, passes under the Jubilee Cave and terminates in a somewhat large and sombre cavern, in the northern end of which is the chamber named THE LILY OF THE VALLEY. Its floor is about 5 feet above that of the cavern. It is lavishly ornamented with many semi-transparent white formations, and compares favourably with any of the beautiful chambers already described. The passage to it is tedious, and it is therefore seldom visited. Returning to the Grand Stalactites, the ascent of some steps to the right leads to the FAIRIES' BOWER. Here is the "Diamond Wall," 20 feet high, and 15 feet broad, which sparkles with the light reflected from a thousand crystals. Over the Diamond Wall are chambers difficult of access, not yet opened. They contain many varied and dainty deposits. In the centre of the Fairies' Bower is a fine white stalagmite. The roof is lofty, and is decorated with small stalactites which are pleasantly set off by the bluish tint of the roof. Leaving the Fairies' Bower, the CRYSTAL PALACE is entered. This is a long avenue abundantly adorned with a beautiful collection of pure white pillars, lime shawls, curtains, and draperies, and occasional chocolate and reddish tinted formations. Further along is a beautiful white formation coated as if with hoar-frost, and a fine group of crystalline amber-tinted columns and stalactites. In a small recess is "A Jewelled Casket," which is filled with delicate and sparkling amber-tinted crystals. Opposite this are some attractive crystalline drapery formations and the glistening white "Bridal Veil." The floor is terraced and rippled by a dark-brown formation covered with crystals. The GARDEN PALACE is next viewed. This is a tiny nook under a ledge of rock. It contains many forms of rare loveliness. One small stalagmite standing in the centre is of a bright-amber tint. The remaining formations are white and semi-transparent. Many



NELLIE'S GROTTO.

little deposits are seen on the floor which look like tufts of fine grass. Opposite the Garden Palace is a group of variously-tinted stalactites, and a very beautifully marked but small "shawl." In a recess on the left is the VEIL. This is an exquisite representation of a veil of gossamer and fine lace, so thin that the colour of the rock it covers can be distinguished. A fringe of stalactites is then passed under, and some fantastic forms are seen on the wall. On one transparent pendant, monkeys appear to be climbing a pole. A side view is then obtained in the "Stalagmite Cave" of the Bridal Veil, already noticed. Here are some fine stalagmites and stalactites, and a white lustrous "Cascade" formation. A halt is next made at THE GEM OF THE WEST. This is one of the most fascinating formations in the Caves. It consists of a white canopy, whose upper portion is decorated with irregular deposits like creepers tied, knotted, or twisted round each other. The lower part is composed of many beautiful glass-like pendants. The visitor is now close to, but on a higher level than, the Vestry Chamber of the Right Imperial main passage. A branch to the right leads, after passing through a narrow and low tunnel, to THE FAIRIES' RETREAT. This is a beautiful grotto, filled with brilliant, amber-tinted, crystals, some of which are 3 inches long and sharply pointed. On one side is a line of graceful and delicate pillars, each of which rests on a base of crystals. This Cave is seldom visited, owing to the discomfort of traversing the low passage. Some small chambers lie beyond it, but are not yet open for inspection. Returning to the "Fairies' Bower," the visitor completes the inspection of the Right Imperial Cave by viewing THE QUEEN'S DIAMONDS. This is a recess of small width and height, which extends back for some distance. Its roof and sides are closely covered with clusters of many-sided sharp-pointed crystals of dazzling brilliancy.

The Jubilee Cave.

This Cave was named in commemoration of the Jubilee Year of the reign of Her Majesty Queen Victoria. It consists of a series of narrow passages, which are decorated from end to end with innumerable lovely white and translucent formations, remarkable for their purity and elegance of form. Many of them are rendered very beautiful by a crystalline coating like hoar-frost. They are relieved here and there by others of an amber tint, and by many fragile deposits which occur in tufts like grass and moss

modelled in ice, or curl and twist in garlands round stalactites and stalagmites. The latter are similar to the grotesque and fantastic growths which have been named "Mysteries" in the descriptions of the other caves, but appear in greater variety and delicacy of form than in those Caves. Branch passages lead to THE RED CAVE, THE ALABASTER HALL, and THE GEM. For the sake of brevity, the more prominent features only will receive special mention. THE JUBILEE CAVE is entered by ascending a flight of steps, which rise from the passage to the Lily of the Valley, where that passage passes under the Gem of the West branch of the Right Imperial Cave. At the top of the steps is the junction chamber. Here the caverns which form the Jubilee Cave branch to the right and left.



Kerry & Co.]

THE ALABASTER HALL.

[Photo.

**Left
Branch.**

After passing groups of stalactites, a crystalline and ripple-marked floor, and another coated as if by a thin sheet of ice, the PEBBLE GROTTTO is reached. Here are some large pebbles cemented together by pale and amber-tinted moss-like crystals. Below them a fringe of stalactites partly hides a delicate film of lime drapery, so thin that the contour of the rock behind is seen. Near it, on the opposite side, is the MARBLE ARCH, where a remarkably fine group of stalactites hang arch-like over some fine stalagmites. Passing other groups, some beautiful stalactites are seen, which depend from rounded forms studded over with small crystal spikes like the quills of

a hedgehog. The next point of interest is the ROUND TUNNEL, a funnel-shaped aperture extending back at right-angles to the passage for a considerable distance. It is decorated by stalactites which depend from the centre of its roof in an unbroken line. Further on a beautiful passage ushers in the ALABASTER HALL. The walls of this superb chamber are graced right up to its conical-shaped roof, 40 feet overhead, with white and amber-tinted draperies, stalactites, and crystal-line formations. On one side is a canopy something like the "Gem of the West," but whiter and more crystalline. This canopy partly hides an exquisite white-walled grotto ornamented with translucent pendants and glistening pinnacled stalagmites. Here and there are clusters of fantastic lime-sprays, which curl or twist or spring straight out from groups of stalactites. They fascinate the spectator with their wonderful beauty, and linger long in his memory. Near the passage to the Alabaster Hall a steep flight of steps leads down to the WATER CAVERN. On the way, stalactites, cascade formations, crystalline basins, rocks strongly marked by fossils, and diminutive "shawls" in an early stage of growth, are passed, and the visitor makes a halt at THE THRONE. Here two small canopies of lovely pure white crystalline deposits surmount an equally fine draped formation. In this part of the cave are seen stalactites coated over with mud, showing the comparatively recent period during which it formed a passage for flood-waters. Now new deposits are making their appearance in the form of pure white pendants, which stand out in bold relief from their mud-stained



Kerry & Co.]

GEM OF THE WEST. (PAGE 72)

[Photo.]

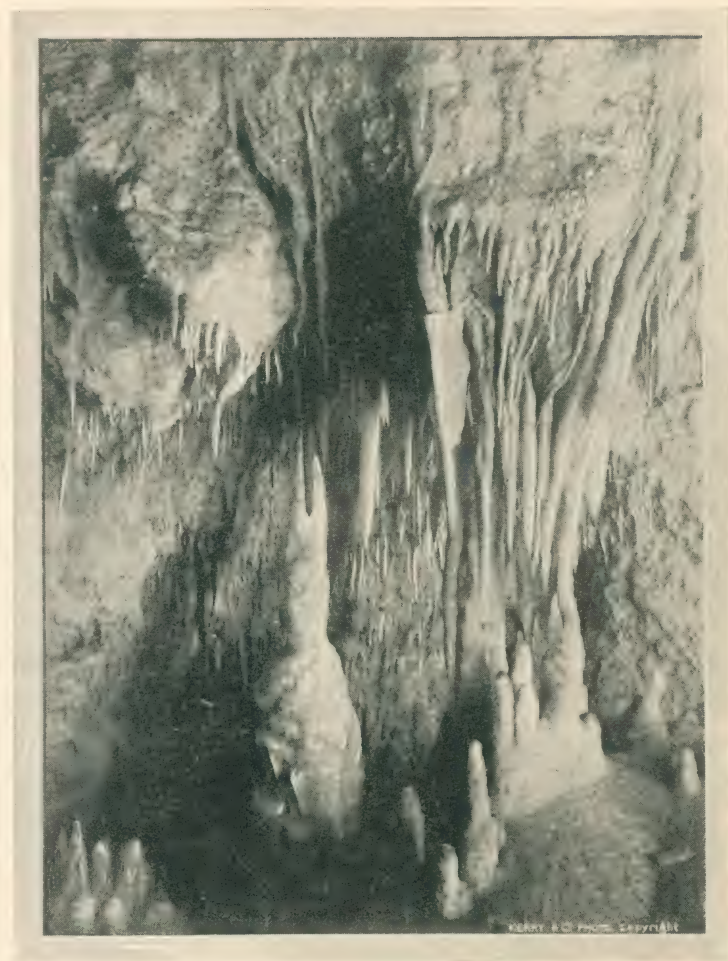


"MYSTERY" FORMATIONS.

neighbours. Two little cavities, like birds' nests, are seen, in each of which are a number of little white lime nodules resembling eggs. The last chamber is muddy and uninteresting. It is of considerable length, and terminates in a pool of water which probably communicates with the present underground waterway. The visitor now retraces his steps and proceeds to inspect the—

Right Branch. The first chamber is known as the COOK CAVERN, named after the Hon. Sir Joseph Cook. A fringe of the "Mystery" type of lime deposits, and a delicate crystalline film, marked by "shawls" in an early state of growth, are noted. The visitor then pauses to admire a deeply-indented and irregular roof, adorned by orange, brown, and yellow-tinted formations. Under some stalactites further on is a beautiful little grotto in which white and icicle-like pendants hang over amber-tinted stalagmites. Near by is a terraced floor like the "Crystal Cities," but formed on a smaller scale; and a remarkably fine crystalline film of lime which decorates a wall. To the right a little nook contains a formation like a snowdrift. On the opposite side is a white crystalline cascade and a formation resembling eiderdown. These are succeeded by bright,

white, amber-tinted, reddish, and lovely salmon-tinted growths. One stalagmite looks like a poodle modelled in Parian marble. The passage to the Gem of Jenolan here branches off to the left, and is described further on. The PRINCE'S CAVERNS are now entered; they contain the marvellously beautiful MARBLE GROTTO. Here myriads of stalactites depend from a white crystalline roof and walls, which appear to be covered with hoarfrost. Occasional salmon-tinted deposits set off the white formations in a charming manner. Some of the stalactites and stalagmites are particularly fine. Similar fascinating forms are found in the passage and a grotto to the right. An amber-tinted column is here adorned by a variety of spikes and crystals, and a fine stalactite is seen with a tiny point which rests on an attractive stalagmite. In the terminal chamber is the PIN CUSHION. Here fragile sprays spring upwards from a ledge of rock in bunches like glass needles or tufts of the sedge plant, and in curious shapes like curled and twisted ribbons. From near these grottos, a passage, decorated with dripstone deposits similar to those which adorn the other parts of the Jubilee Cave, leads to the Gem Cavern.



VICTORIA BOWER.

The Gem Cavern.

THE GEM may be said to be divided into three chambers, although they together form one cavern. On entering the lower chamber the spectator is lost in admiration of the superb spectacle which it presents. Innumerable pure white or tinted stalactites cover snow-white crystalline walls. Diminutive stalactitic growths, like hoar-frost, add to the beauty of these walls. Right up to the apex of the dome-shaped roof the ornamentation continues without a break. A steep incline and a fringe of large white stalactites divides the middle from the lower chamber. The same marvellous wealth of dripstone formations occurs here. The glistening white pendants are so closely packed that they appear to merge into one another at their bases. Beautiful beyond description as are these chambers, in the upper chamber an even more beautiful exhibition of fascinating forms has been provided by Nature's masterhand. It has been named the VICTORIA BOWER. The roof is dome-shaped, but not so lofty as that of the lower chamber. On the left are two snowy-white translucent columns, surrounded by large crystalline, white, or amber-tinted stalactites, and by smaller ones, on which are coral-like growths. The larger column is about 6 feet high. Its base is some 2 feet in diameter, beautifully terraced; from thence the column tapers gracefully upwards. The smaller column is festooned with fantastic lime-sprays. On the right is a fine slightly terraced column. When the magnesium light is held behind this it is seen to be semi-transparent, and to be of a soft, warm, pinkish tint. The visitor will leave the Bower with a feeling that nothing in Nature can exceed it in beauty. In the floor of the lower chamber a hole gives access to tortuous and difficult passages, which open into grottos and chambers of unusual beauty.* A distinctive feature is found in the first of these. A crystalline greyish-blue formation has been deposited for some length on the floor, and represents in an exquisite manner a mountain stream with three sparkling waterfalls; its banks are marked here and there by cascades, whose waters appear to have frozen as they fell.

* Not yet open to the public.

The Red Cave.

(Unopened owing to the difficulty of providing safe access.)

Near the junction of the right and left branches of the Jubilee Cave, and within sight of a dangerous hole which descends into the "Gem of the West" branch of the Right Imperial Cave, a somewhat difficult ascent over or under broken rocks leads to THE RED CAVE, so called from the reddish tint of many of its formations. The first object to attract attention is a singularly beautiful pinnacled white stalagmite, over which hangs a fine white stalactite. The magnificent main chamber is then entered. Here are enchanting varieties of pure white, amber, or reddish-tinted stalactites, stalagmites, "draperies," and "cascades." Two "shawls" are exquisitely marked. A little basin contains many-sided amber-tinted crystals with sprays of other crystals springing from their sides. Numerous rocks have fallen since the dripstone growth first commenced. This is evidenced by one huge rock, many tons in weight, which has been tilted as it fell. The stalactites which once depended from it now point upwards. Little clusters of tiny stalactites are seen pendant from the ends of two fine stalactites, where the latter have



THE RED CAVE.

been broken, probably by the vibration caused by some falling mass. A branch of the Red Cave has been named PARADISE, because of its marvellous beauty. It will be sufficient here to say that its walls sparkle as if covered with diamonds, and that amongst its attractions are highly ornamented alcoves and grottos, many little basins resplendent with snow-white or amber-tinted crystals, an unusually fine collection of fantastic growths known as "Mysteries," and two white, translucent, and crystalline stalagmites unequalled for their beauty.

The Aladdin Cave.

This magnificent Cave is situated at the foot of a cliff, 3 chains west of McKeown's Valley, 2 chains southerly from the Glass Cave, and 30 chains north of the Grand Archway. The entrance is about 130 feet above the level of the creek. The main chambers are about 80 feet below the entrance, and are reached by scrambling along a passage for some 150 feet. As in the case of the Elder Cave, it has not been found practicable to make the passage as easy or convenient as those of the other caves which are open to the public; but the descent is perfectly safe, and is not difficult for persons of active habit. There are two main chambers. The southern one is about 20 feet by 23 feet by 30 feet, and is marvellously beautiful. It contains an infinite variety of fascinating forms of cave embellishment. Sparkling crystal "cascades" and "drapery" formations grace walls dotted throughout with crystals, which twinkle like stars, and when the powerful light is thrown into some remote corner, crystal spangles

"Glitter like broken-up moonbeams on the wavelets of a summer sea."*

On one hand are bunches of reddish-tinted coral-like crystals; on another are myriads of diminutive stalactites, and groups of larger ones—some reddish, others cream-coloured or snowy-white or translucent. Looking through a fringe of stalactites, which remind one of Nellie's Grotto in the Imperial Cave, is seen a fairy-like grotto. In the foreground are some exceptionally graceful and semi-transparent columns, whose beauty is enhanced by the remains of an older column which lie in ruins at their base. Beyond this is a crystal basin with a ripple-marked margin. To the left of this, bunches of reddish-tinted

* S. Cook.

crystals reflect a thousand lights from their many facets. In the background are many tiny pillars and delicate pendants. It is not easy to convey any adequate idea of the exquisite beauty of this Cave, which must fascinate those who are not easily moved by the results of Nature's handiwork. It requires to be seen to be appreciated.

. all alight
As with the quintessence of flame
A million tapers flaring bright
From twisted silvers looked to shame
The hollow-vaulted dark and stream'd
Upon the mooned domes aloof.

—TENNYSON.



Notes on Unopened Caves North and South of the Main Caverns.

From the Grand Archway the limestone belt extends northerly for about 3 miles, and is dotted here and there with caves. Some of these are attractive, but have not been improved owing to the difficulty of making them convenient of access. The most distant are the BUSHRANGER'S CAVE and McKEOWN'S HOLE, which are small, and have little beauty, but are of historical interest, as they were used as hiding-places by a bushranger named McKeown, and thus led to the early discovery of the more important Caves. At a little over one mile from the Grand Archway, on the eastern side of McKeown's Valley, is the entrance to the MAMMOTH CAVE. This Cave is of large extent, and is difficult and dangerous to explore. It contains many vast and gloomy caverns, whose floors are strewn with huge rocks. Here and there are chasms which descend to the level of the present underground waterway. Lower down McKeown's Valley, on its opposite side, and a little under half a mile from the Grand Archway, are the FRENCHMAN'S and GLASS CAVES. Both these contain many beautiful deposits, and may in the future be opened, especially if they are found on exploration to be connected with branches of the Imperial Cave. Half a mile southerly from the Grand Archway is the BOTTOMLESS PIT, said to be over 300 feet deep, and to contain some fine formations. For a detailed description of the Mammoth, Glass, and Frenchman's Caves, see "The Jenolan Caves," by J. J. Foster, 1890.



ORPHAN ROCK, KATOOMBA.

REMARKS ON THE CAVES DISTRICT.

It will be gathered from a perusal of the descriptions which are given of the routes to the Caves that the country they traverse presents much to interest the tourist, artist, and geologist alike; but wild and impressive as is the country between Katoomba, Mt. Victoria, or Tarana, and the Caves, yet beyond the latter, to the southward, Nature has carved out the land in equally bold and rugged fashion.

At the Kanangra (Kowmung) Walls, Thurat Plateau, the artist will meet with dizzy precipices, graced by many fern-clad cascades and waterfalls, and he may find attraction in what appears to be the rude drawings of aboriginals in a rock-shelter. For the sportsman, game is abundant, as it is practically undisturbed. Good fishing is also to be obtained. For the geologist there are many points of interest, from the mural precipices of Hawkesbury sandstone to the coal-seams which crop out below the sandstone at the "Walls," or in the mineral deposits of the Tuglow River and its tributaries.

This mountain plateau is 17 miles S.S.E. of the Caves, on the bridle-track to Picton, and is easily reached on horse-back, and with some inconvenience by buggy.



THE KANANGRA WALLS.

In order to add to the interest of the book, reference has been made to, or extracts taken from, the following :—



THE KANANGRA WALLS.

The work is illustrated by reproductions from photographs by the artists attached to the photographic branches of the Government Printing Office and Public Works Department, by Mr. Cooke ; by the late Mr. Rowe ; by Kerry & Co., of Sydney ; H. Phillips, of Katoomba ; and the Author.

I have especially to thank Mr. W. A. Gullick, Government Printer, for the excellent manner in which the Guide Book has been produced.

“The Railway Guide of New South Wales.” Third Edition, 1886. From papers supplied for that work by the late C. S. Wilkinson, L.S., F.G.S., and the late Lamont H. G. Young, C.E., F.G.S.

“Track from Katoomba to Jenolan Caves,” by W. M. Cooper, 1885.

“Geological Observations,” &c., 1876. Second Edition. Part I, chap. vii, p. 151, by Charles Darwin, M.A., F.R.S., &c.

“Nineteenth Century,” 1893. Vol. 33, p. 391. Paper by Dr. A. R. Wallace, LL.D., F.R.S.

Anniversary Address, by the President, Royal Society of N.S.W., 1896, Vol. xxx. By Professor T. W. E. David, B.A., F.R.S., F.G.S.

“The Jenolan Caves : An Excursion into Australian Wonderland,” 1889, by Samuel Cook. (Reprinted from the *Sydney Morning Herald*.)

“The Jenolan Caves,” by J. J. Foster. Published by the Government of New South Wales, 1890.

O. TRICKETT.



PLAN

SHOWING LOCALITY OF THE

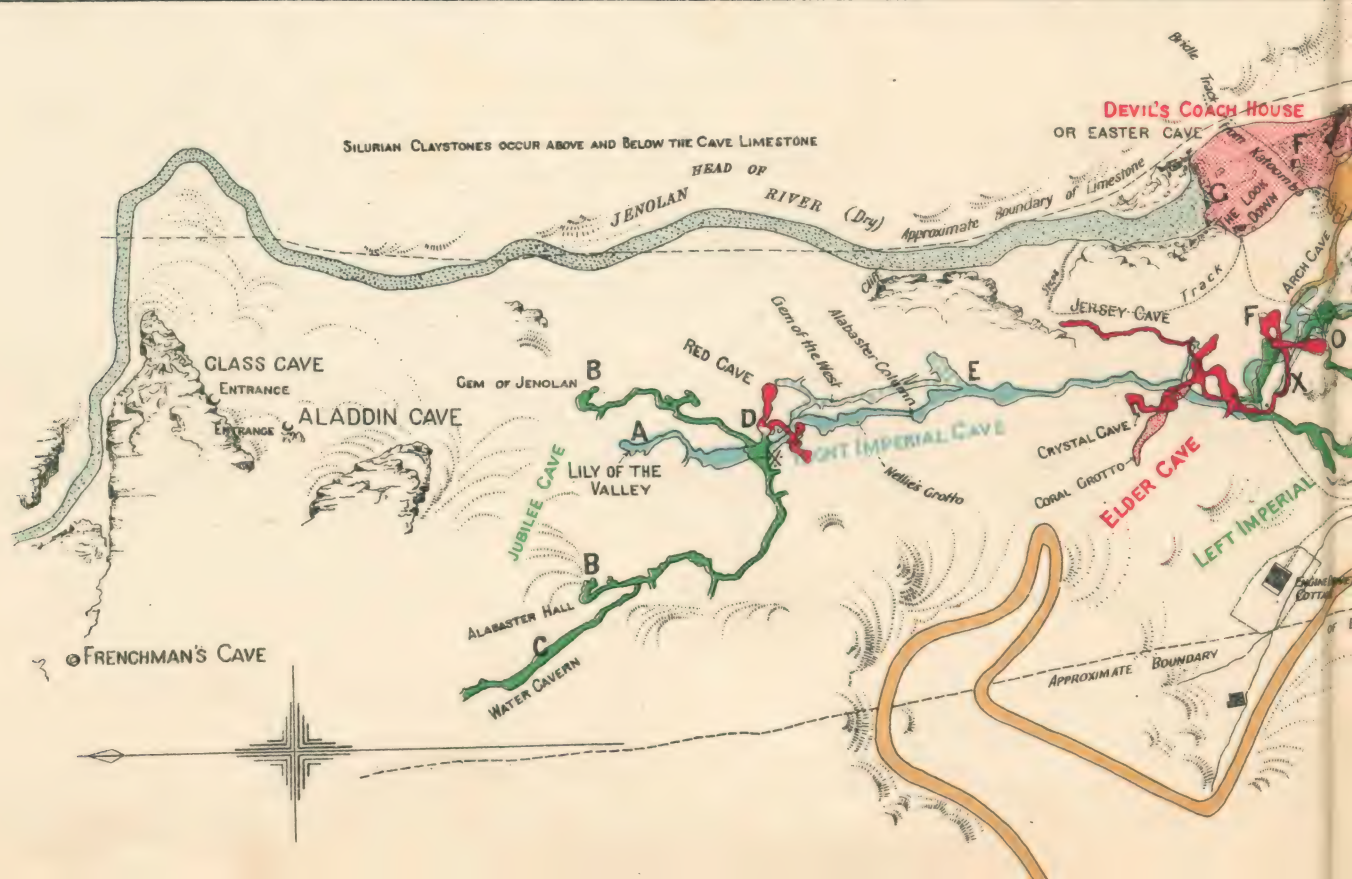
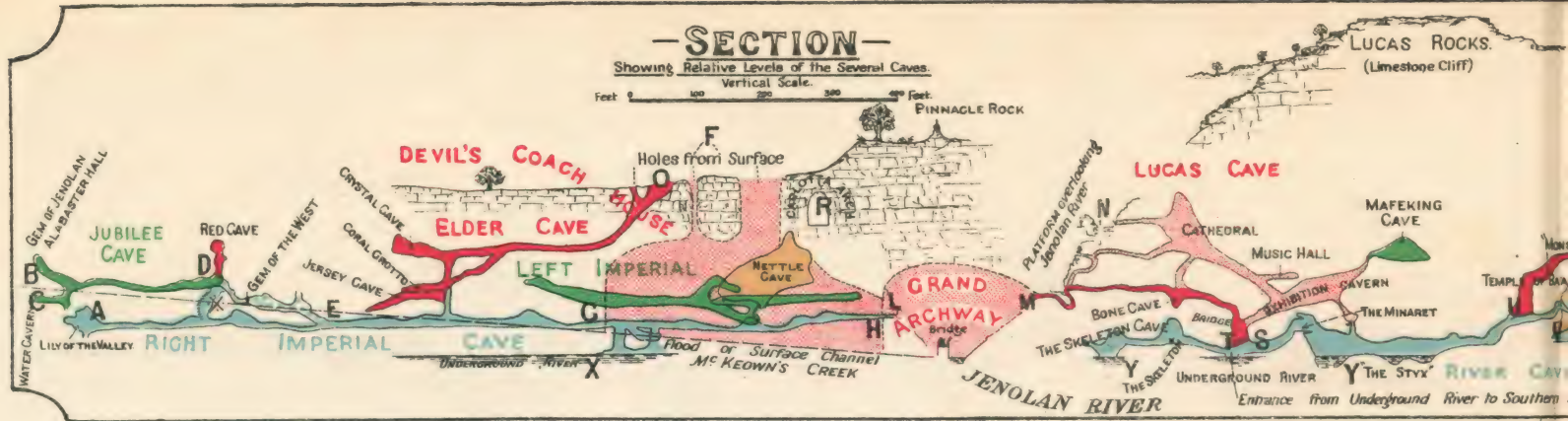
JENOLAN CAVES

Scale 0 1 2 Miles



NOTE.—The Wentworth Caves are situated 34 miles south of Jenolan Caves (about 25 miles by road and track via Mount Waring).

The Colong (Blind) Caves are situated on the east of the Koomung River, 20 miles S.E. of Jenolan (about 20 miles by track via Kanangra Walls).



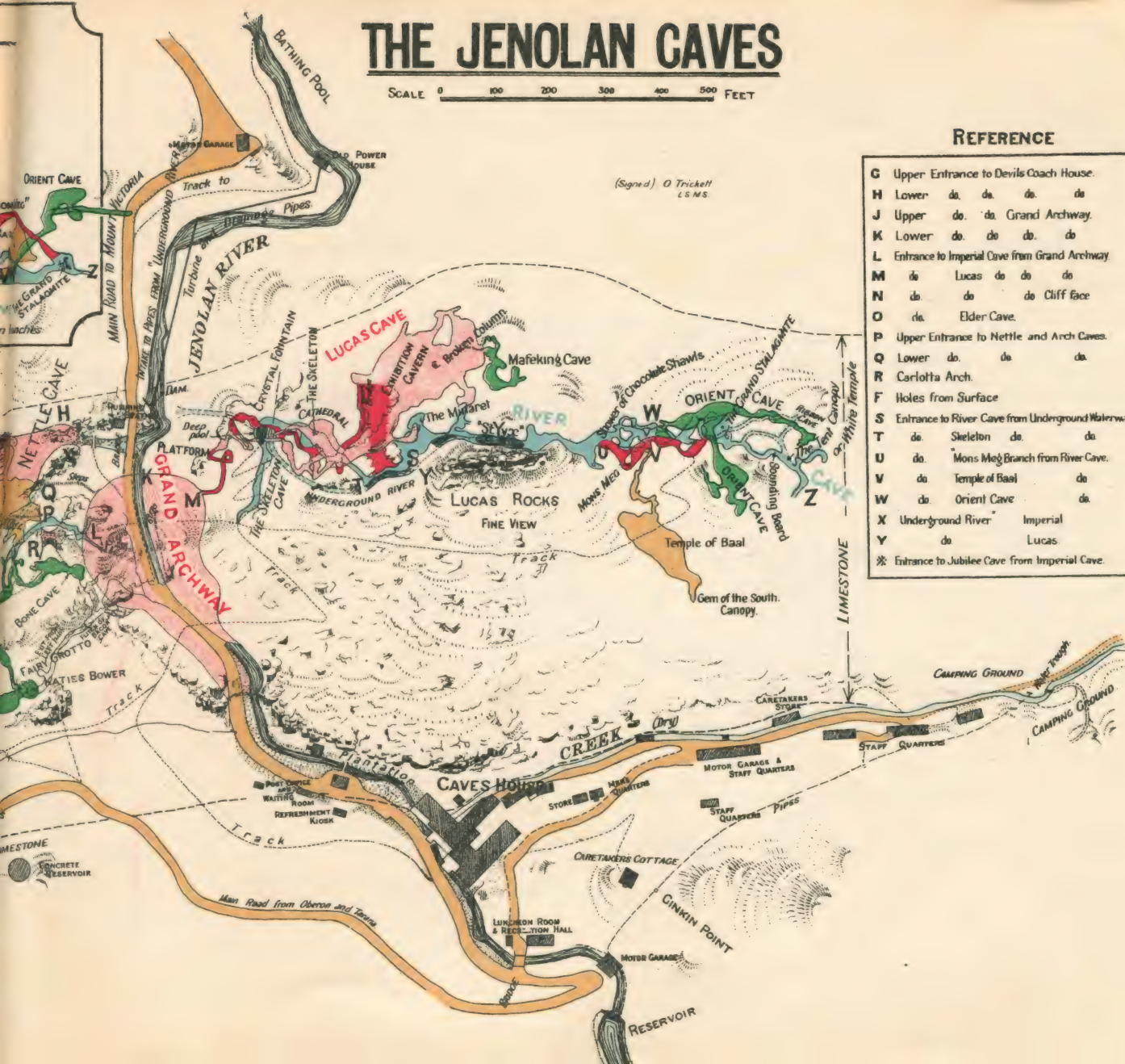
THE JENOLAN CAVES

SCALE 0 100 200 300 400 500 FEET

(Signed) O Trickett
L.S.M.S.

REFERENCE

G	Upper Entrance to Devils Coach House.
H	Lower do. do. do. do.
J	Upper do. do. Grand Archway.
K	Lower do. do. do. do.
L	Entrance to Imperial Cave from Grand Archway.
M	do Lucas do do do
N	do do do Cliff face
O	do Elder Cave.
P	Upper Entrance to Nettle and Arch Caves.
Q	Lower do. do do
R	Carlotta Arch.
F	Holes from Surface
S	Entrance to River Cave from Underground Waterway
T	do Skeleton do do
U	do Mons Meg Branch from River Cave.
V	do Temple of Baal do
W	do Orient Cave do
X	Underground River Imperial
Y	do Lucas
※	Entrance to Jubilee Cave from Imperial Cave.



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and

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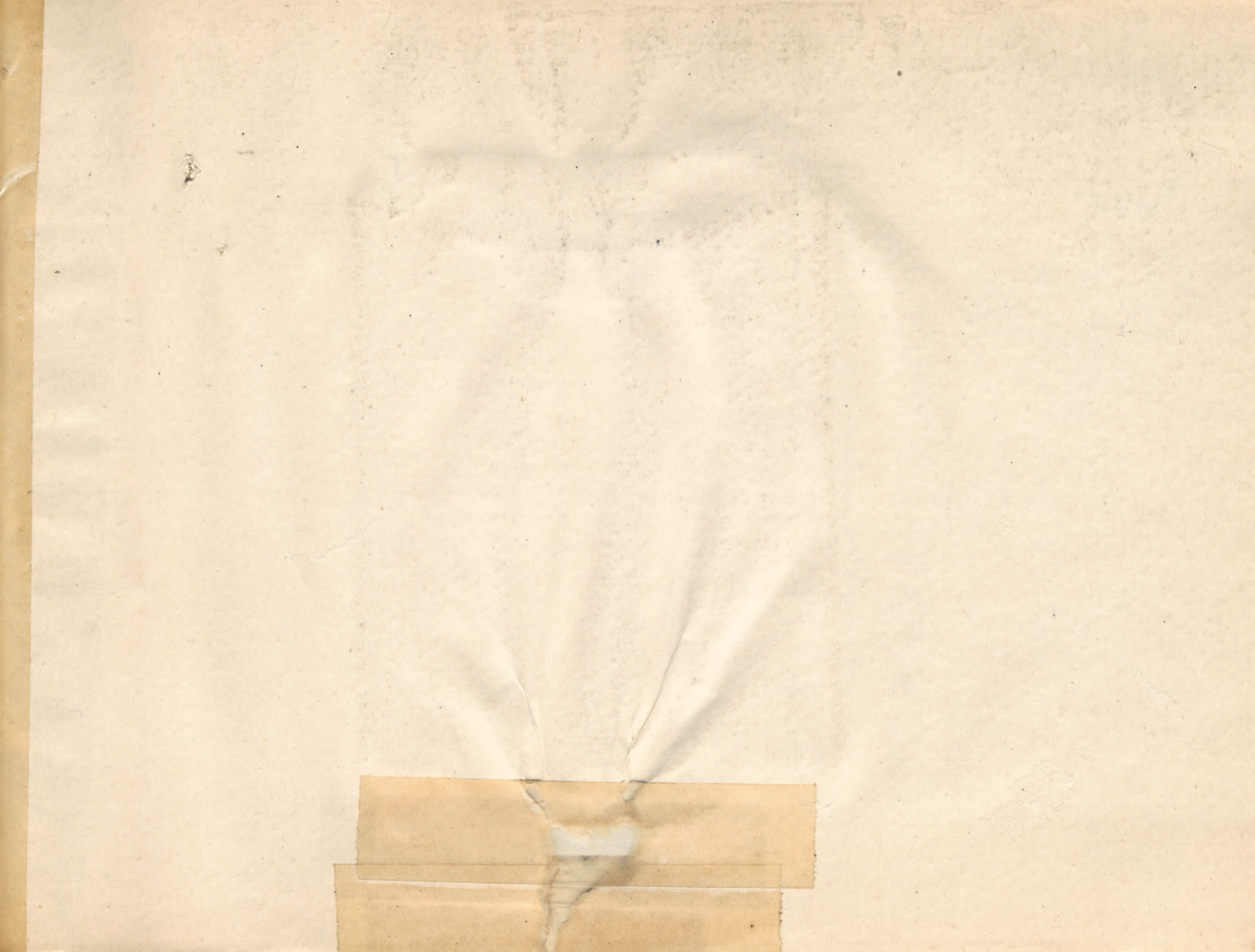
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